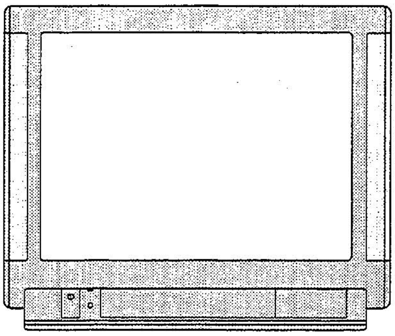
May1996

MITSUBISHI

Service Manual



Colour TV Models

CT-28AV1GS
CT-28AV1G-S CT-28AV1S-S
CT-28AV1GDS CT-28AV1SD-S
CT-28AV1GD-S CT-28AV1ED-S

SPECIFICATIONS

Reception System	CCIR-BG/DK* PAL/SECAM		(GS*, G-S*, GDS*, GD-S*, ED-S)
	CCIR-BG/DK/I/L PAL/SECAM		(S-S*, SD-S*)
Reception Frequency	UHF 470MHz~862MHz		
	VHF 47~170MHz (VB1), 170~448MHz (VB2)		
Satellite Tuner	Fitted to 28AV1GS, GDS Optional tuner kit SA-95G available for 28AV1G-S, GD-S, S-S, SD-S, ED-S)		
Stereo System	ZWIETON		(all models except *some* early SD-S* and S-S*)
	NICAM		(S-S, SD-S)
Mains Input	AC 230V 50Hz		
Power Consumption (to IEC65)	110W	(28AV1S-S, G-S)	+18W for Satellite tuner when fitted.
	114W	(28AV1GD-S, SD-S, ED-S)	
	134W	(28AV1GDS)	
	128W	(28AV1GS)	
Aerial Input	75 ohm		
Audio Output (music power)	12W + 12W + 15W		(28AV1GS, G-S, S-S)
	12W + 12W	[Internal left + right = centre]	(28AV1GDS, GD-S, SD-S, ED-S)
	12W + 12W	[External left + right]	
	6W + 6W	[Rear]	
	15W	[Sub woofer]	
Speaker	2 x (ø10 + ø4) + ø10		(28AV1GS, G-S, S-S)
	2 x (ø10 + ø4) + ø10	[Internal]	(28AV1GDS, GD-S, SD-S, ED-S)
	2 x (ø10.5 + ø5)	[Front]	
	2 x ø10.5	[Rear]	
Chassis	EE3		
Picture Tube	A66EGW83X101	66cm(V)/28", 110°	
Cabinet dimensions	67cm x 49.5cm x 55cm	(approx. W x D x H)	
Weight	34Kg (approx.)		

* ***See the table on page 8 for differences on early production sets. See page 25 or ask Mitsubishi Service Department for serial numbers of affected models***

MITSUBISHI ELECTRIC CORPORATION

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1 GENERAL NOTES

1.1 SAFETY PRECAUTIONS

1.1.1 General Warnings

1. Observe any cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.
2. An isolation transformer should be used between the television receiver and the AC power supply point before any test or servicing is performed on a LIVE chassis television receiver.
3. Operation of these receivers outside the cabinet or with the back cover removed involves a shock hazard from the receiver power supplies. Work on the receiver should not be attempted by anyone who is not familiar with the precautions necessary when working on high voltage equipment.
4. Do not install, remove or handle the picture tube in way unless shatterproof goggles are worn. People not so equipped should be kept away while the picture tube is being handled. Keep the picture tube away from the body while handling.
5. When service is required, observe the original lead dressing. Extra precaution should be given to assure correct lead dressing in the high voltage area. Where a short-circuit has occurred, replace those components that indicate evidence of overheating.

1.1.2 X-RAY Warning

Under fault conditions the CRT can generate X-rays. The use of a lead apron is recommended if available.

When replacing the CRT only use the designated replacement part as it is a critical component with regard to X-rays. No high-voltage adjustments are provided.

1.1.3 Leakage Current Check

Before returning the receiver to the customer it is recommended that the leakage current be measured according to the following method:

With the AC plug removed from the AC source, place a jumper across the live and neutral pins. Turn the receiver AC switch on. Using an OHMMETER, connect one lead to the shorted AC plug and touch the other lead to each exposed metal part (antennas, screw heads, etc.) in turn, particularly any exposed metal part having a return path to the chassis. Any resistance below a value of 1 MEG OHM indicates an abnormality which requires corrective action.

1.2 CONTROLS AND CONNECTORS

1.2.1 Front Panel

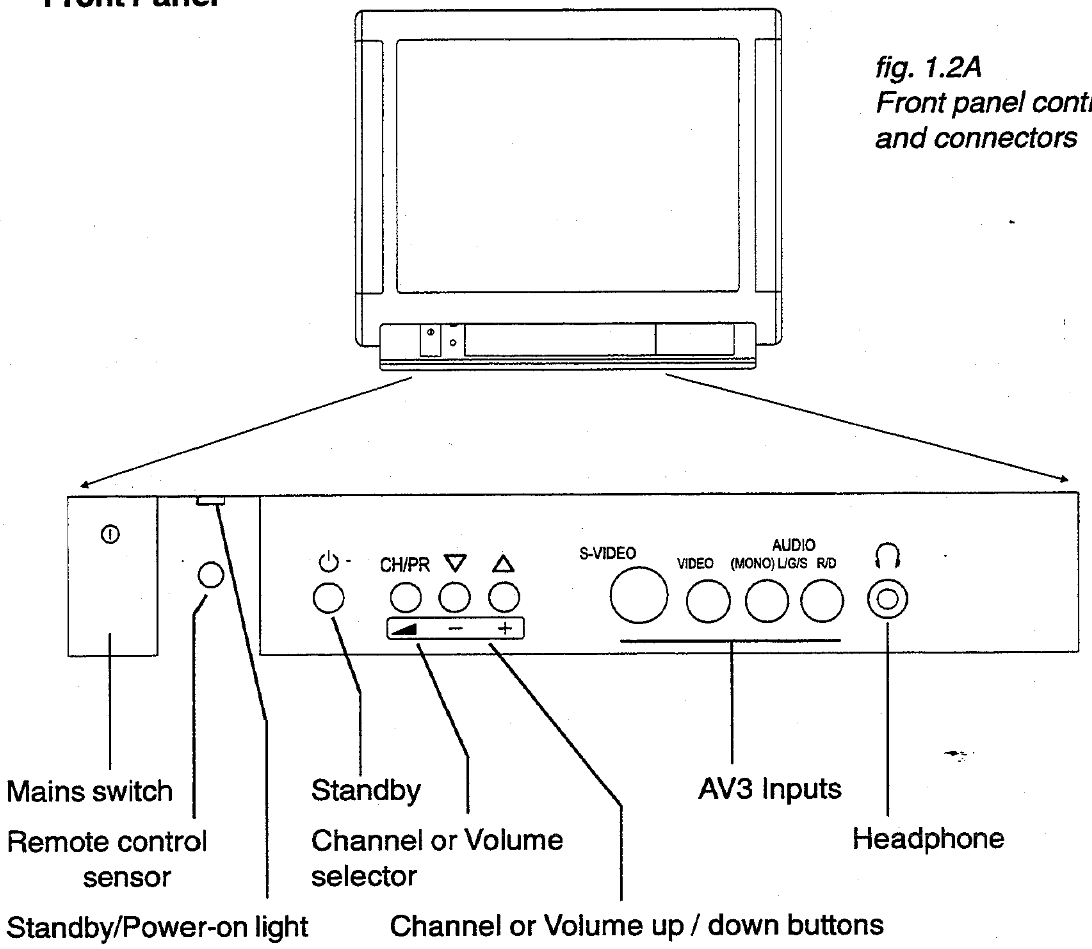

CH/PR
S-VIDEO
VIDEO
AUDIO
(MONO) L/G/S
R/D
Mains switch
Remote control sensor
Standby/Power-on light
Standby
Channel or Volume selector
Channel or Volume up / down buttons
AV3 Inputs
Headphone

fig. 1.2A
Front panel controls and connectors

1.2.2 Rear Panel

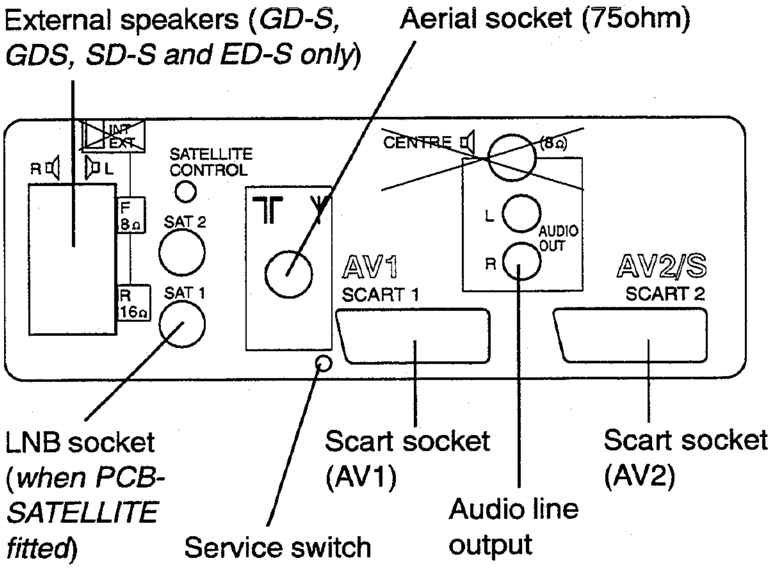
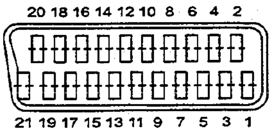

External speakers (GD-S, GDS, SD-S and ED-S only)
Aerial socket (75ohm)
INT
EXT
SATELLITE CONTROL
SAT 2
SAT 1
F 8Ω
R 16Ω
CENTRE
(8Ω)
L
R
AUDIO OUT
AV1
SCART 1
AV2/S
SCART 2
LNB socket (when PCB-SATELLITE fitted)
Service switch
Scart socket (AV1)
Audio line output
Scart socket (AV2)

fig. 1.2B Rear panel connectors


20 18 16 14 12 10 8 6 4 2
21 19 17 15 13 11 9 7 5 3 1

Pin	AV1	AV2
1	Audio out – R	Audio out – R
2	Audio in – R	Audio in – R
3	Audio out – L	Audio out – L
4	Audio earth	Audio earth
5	Blue earth	Earth
6	Audio in – L	Audio in – L
7	Blue in	Not connected
8	Function switch	Function switch
9	Green earth	Earth
10	Not connected	Not connected
11	Green in	Not connected
12	Not connected	Not connected
13	Red earth	Chroma earth
14	Blanking earth	Earth
15	Red in	Chroma in
16	RGB blanking	Not connected
17	Video out earth	Video out earth
18	Video in earth	Y earth
19	Video out	Video out
20	Video in	Y in
21	Socket earth	Socket earth

fig. 1.2C Scart socket pin details

1.3 REQUIRED EQUIPMENT

1.3.1 Measuring equipment

- Oscilloscope
- Signal generator
- DC milliammeter
- DC voltmeter

1.3.2 Test signals

- PAL Crosshatch
- PAL Monoscope (or a VCR playing a monoscope alignment tape)
- PAL Colour-bar with the specification as in figure 1.3A below:

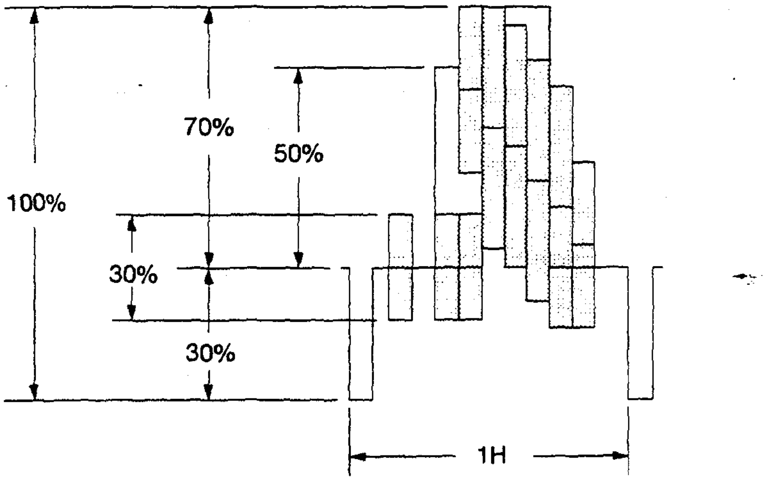

70%
50%
100%
30%
30%
1H

fig. 1.3A Split-field colour bars (with 100% window)

1.4 CONNECTING LEADS

1.4.1 Identification

Connecting leads are identified by the colours of their wires according to figure 1.4A below:

Colour	Code
BLACK	A
BROWN	B
RED	C
ORANGE	D
YELLOW	E
GREEN	not used (earth)
BLUE	G
VIOLET	H
GREY	J
WHITE	K
PINK	L

Example:

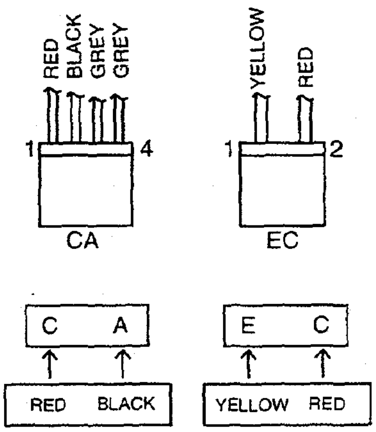

RED
BLACK
GREY
GREY
1
4
CA
YELLOW
RED
1
2
EC
C A
RED BLACK
E C
YELLOW RED

fig. 1.4A Connecting lead identification chart

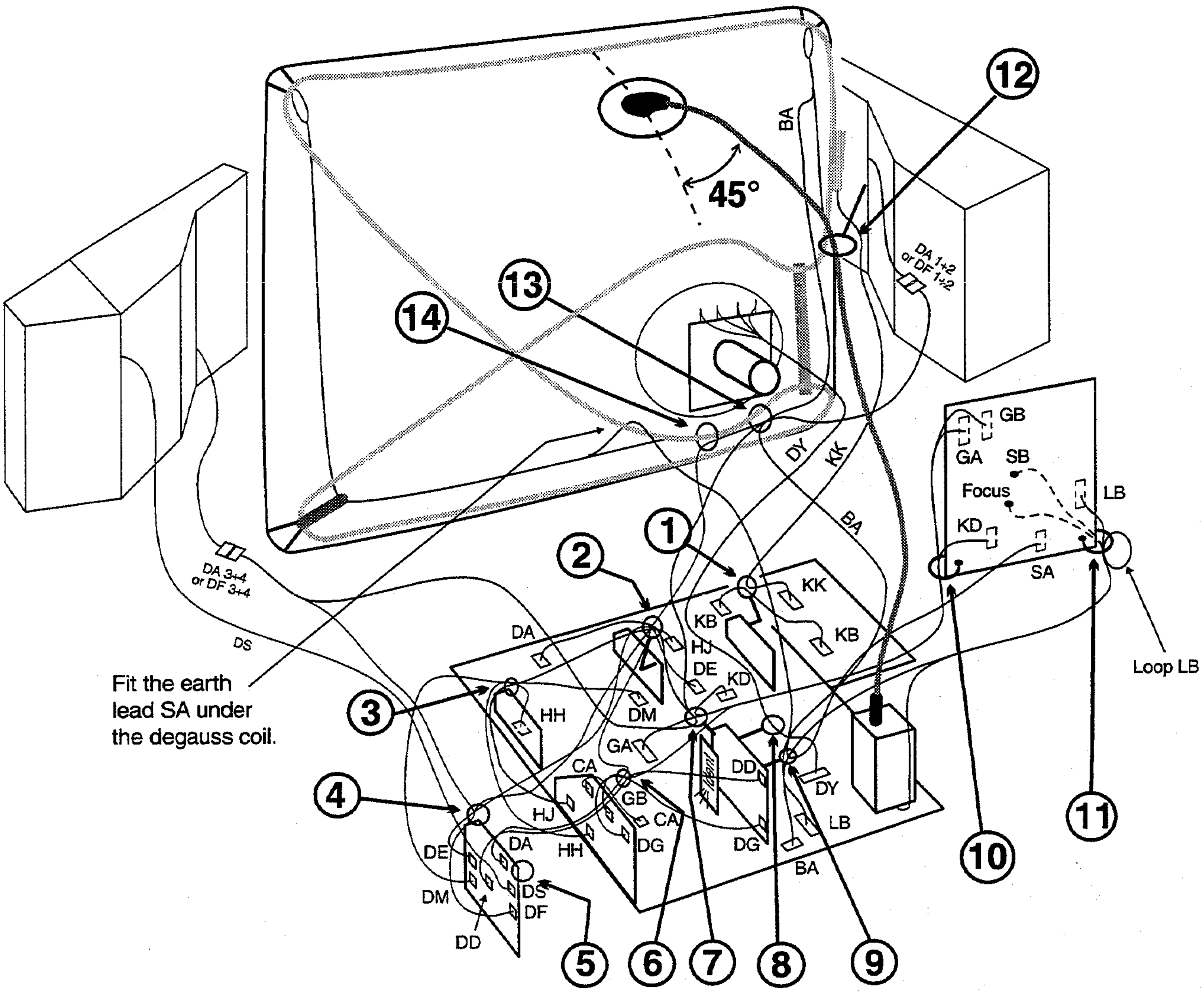
1.4.2 Lead dressing

Leads must be dressed as shown in table 1.4B and the diagram (fig. 1.4C) below. The leads are routed or clamped so that they do not come close to any heat generating or high-tension parts.

The anode lead wire is routed such that no tension is applied to the anode cap. If the mounting angle of the anode cap and the route of the anode lead wires are changed, return them to the initial angle and route.

CLAMP	28AV1GS,G-S, S-S	28AV1GDS, GD-S, SD-S, ED-S
1	KB, KK	KB, KK
2	DA, (HJ)*	DA, (HJ)*
3	(HH), (HJ)	DM*, (HH), (HJ)
4		DE, DD
5		
6	DA, DF, (DG), (GB)	DA, DF, (DG), (GB)
7	GA, DA	GA, DE
8	DY**	DY**
9	KD, LB, SA, BA**	KD, LB, SA, BA**
10	GA*, (GB)	GA*, (GB)
11	LB*, SB, Focus	LB*, SB, Focus
12	Anode lead	Anode lead
13	BA, DA	BA, DF
14	DA 1 + 2	DF 1 + 2
* Loop the lead in the clamper, ** Loop the lead twice in the clamper (brackets) indicate wiring for the Satellite PCB.		

table 1.4B Lead-dressing table.


⑫
BA
45°
DA 1+2 or DF 1+2
⑬
⑭
GB
GA
SB
Focus
LB
KD
SA
Loop LB
DY
KK
BA
①
②
DA 3+4 or DF 3+4
DS
KK
KB
KB
DA
HJ
DE
KD
③
HH
DM
GA
CA
DD
DY
④
GB
CA
HJ
LB
DA
HH
DG
DG
DE
BA
DM
DS
DF
DD
⑩
⑪
⑤
⑥
⑦
⑧
⑨

Fit the earth lead SA under the degauss coil.

fig. 1.4C Lead-dressing diagram.

2 SERVICE ADJUSTMENT PROCEDURES

2.1 introduction

Most service adjustments to these models are made using the remote control (figure 2.1A) with the TV in service mode. The adjustment data is stored in an EEPROM.

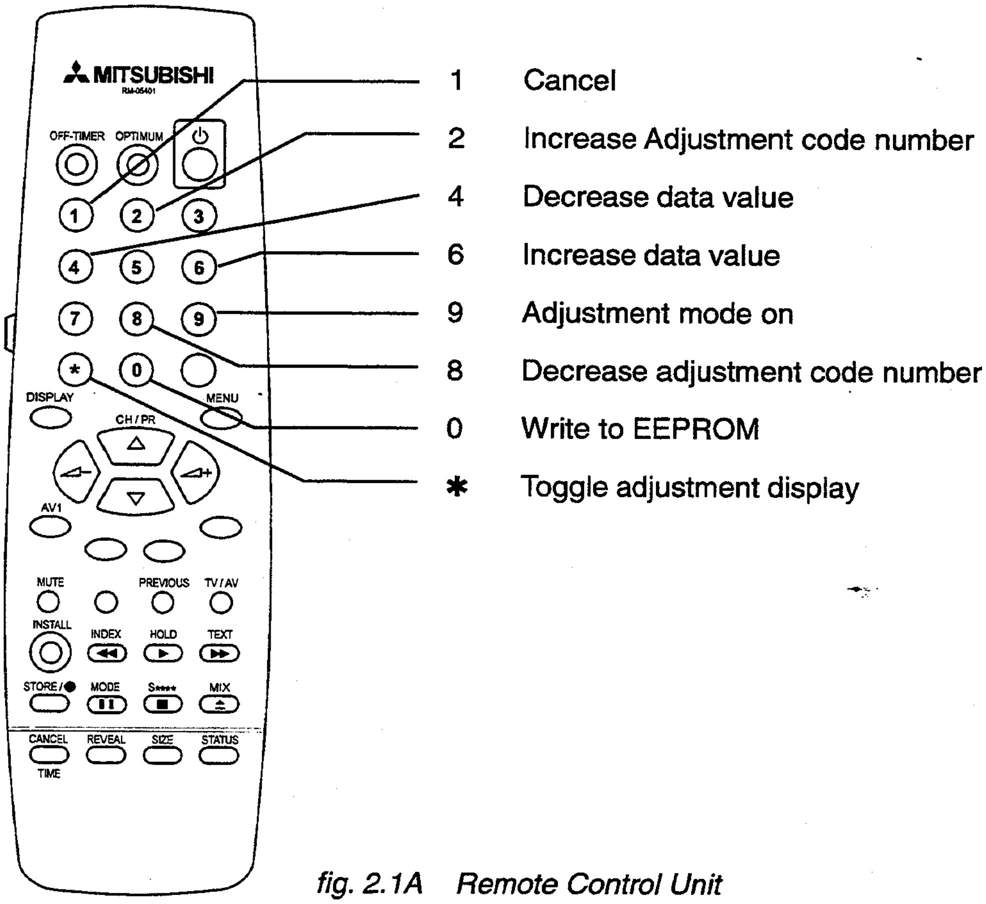

MITSUBISHI
RM-05401
OFF-TIMER
OPTIMUM
DISPLAY
MENU
CH / PR
AV1
MUTE
PREVIOUS
TV / AV
INSTALL
INDEX
HOLD
TEXT
STORE / ●
MODE
MIX
CANCEL
REVEAL
SIZE
STATUS
TIME
1 Cancel
2 Increase Adjustment code number
4 Decrease data value
6 Increase data value
9 Adjustment mode on
8 Decrease adjustment code number
0 Write to EEPROM
✱ Toggle adjustment display

fig. 2.1A Remote Control Unit

2.1.1 Basic adjustment procedure

1. Turn the power on. With a small screwdriver, press the Service switch (S701, next to the aerial socket) and then button "9" within 5 seconds to enter service mode.
2. Press the "✱" button to select either the VCJ or OPTION adjustment display (figs. 2.1B and C).

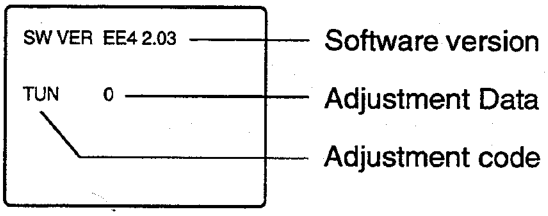

SW VER EE4 2.03
TUN 0
Software version
Adjustment Data
Adjustment code

fig. 2.1B Options adjustment display

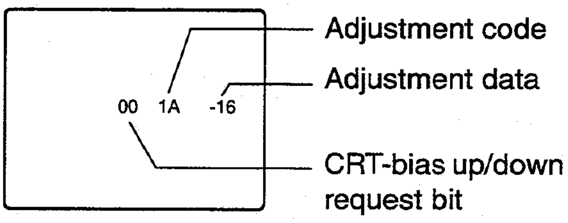

00 1A -16
Adjustment code
Adjustment data
CRT-bias up/down request bit

fig. 2.1C VCJ adjustment display

3. Press buttons "2" or "8" to increase or decrease the adjustment code number.
4. Press buttons "6" or "4" to increase or decrease the data value.
5. After completing your adjustments, press button "0" to write the adjustment data to the EEPROM.

   To cancel a change, press button "1" (or the Standby button) before writing the adjustment to the EEPROM. All data adjusted since the last EEPROM write will be reset.

2.2 INITIALISING THE EEPROM

If you have replaced the EEPROM (IC702) or if for any reason the adjustment data has become corrupted it will be necessary to initialise the EEPROM.

2.2.1 Initialising the EEPROM

1. If necessary, switch off by the Main switch.
2. Hold in the service switch (S701, next to the aerial socket) while switching on by the Main switch.
3. Release the service switch after 3 seconds.
4. Switch off by the Main switch.

   The EEPROM data values have now all been reset to their initial default values as shown in table 2.2C.
5. Switch on by the Main switch. Press the Service switch and then button "9" within 5 seconds to enter service mode.
6. Press the "✱" button to select the OPTIONS adjustment display.
7. Press buttons "2" or "8" on the remote control to select the adjustment code.
8. Adjust the data value for each code using buttons "2" or "4" on the remote control according to table 2.2A below:

   (Other adjustment codes will be displayed but need not be changed on these models.)

CODE:	TUN	SAT	AUD	ATS	STD	SYS	AVI	SPK	ABG	AI	AL	ADK	MNP	FFT	VOL	HYP	SCP	FMP
28AV1GS	1	1	01	1	0/3[3]	2	2	1	12	08	06	08	70	0	–	–	–	–
28AV1G-S	1	0[1]	01	1	0/3[3]	2	2	1	12	08	06	08	70	0	–	–	–	–
28AV1GDS	1	1	11	1	0/3[3]	2	2	1	12	08	06	08	70	0	74	1	20	23
28AV1GD-S	1	0[1]	11	1	0/3[3]	2	2	1	12	08	06	08	70	0	74	1	20	23
28AV1S-S	1	0[1]	00/02[4]	0	3/5[2]	2	2	1	12	08	06	08	70	1	–	–	–	–
28AV1SD-S	1	0[1]	10/12[4]	0	3/5[2]	2	2	1	12	08	06	08	70	1	74	1	20	23
28AV1ED-S	1	0[1]	12	0	3	2	2	1	12	08	06	08	70	1	74	1	20	23

[1] SAT = 1 when PCB-SATELLITE is fitted

[2] S-S and SD-S models only: STD = 3 for BG/DK (faster tuning), STD = 5 for BG/DK/I/L

[3] 0 = BG only (for early production), 3 = BG/DK – ask Mitsubishi Service Dept. for affected Serial Numbers

[4] 00 or 10 = Nicam only (for early production), 02 or 12 = Nicam + Zwieton – ask Mitsubishi Service Dept. for affected Serial Numbers

table 2.2A Data values for the OPTIONS adjustments.

9. Press the "0" button to write the changes to the EEPROM.
10. Press the "✱" button to select the VCJ adjustment display.
11. Press buttons "2" or "8" on the remote control to select the adjustment code.
12. Adjust the data value of each code using buttons "2" or "4" on the remote control according to table 2.2B below:

    (Other adjustment codes will be displayed but need not be changed on these models.)

CODE:	**07**	**11**	**12**	**19**	**1B**	**1C**
VALUE	-7	001	111	-1	-13	00

table 2.2B Data values for the VCJ adjustments.

13. Press the "0" button to write the changes to the EEPROM.

2.2.2 EEPROM Default data values.

These values are adequate to allow the set to be adjusted.

VCJ data values

CODE	FUNCTION	DATA VALUE
00	V-AMP	-16
01	V-CORRECT	-31
02	P-AMP	+05
03	TILT	-12
04	V-LIN	+23
05	C-CORRECT	-09
06	H-AMP	-22
07	16x9 - SW.RGB-MATRIX	-7
08	V-SHIFT	+02
09	H-PHASE	+10
0A	B-DRIVE	+01
0B	G-DRIVE	+01
0C	R-DRIVE	+01
0D	CONTRAST	+14
0E	BRIGHT	+01
0F	COLOUR-SAT	+10
10	NTSC-TINT	00
11	SHARP	111
12	PAL-LUMA-DELAY	111
13	SECAM-LUMA-DELAY	111
14	V-AMP-60	00
15	P-AMP	00
16	H-AMP-60	00
17	V-SHIFT-60	00
18	H-PHASE-60	00
19	H-PHASE-TEXT	00
1A	H-PHASE-SECAM	00
1B	H-PHASE-RGB	00
1C	P-AMP-16 : 9	00
1D	358NTSC-LUMA-DELAY	111
1E	443NTSC-LUMA-DELAY	111

OPTIONS data values

ITEM	DESCRIPTION	DATA VALUE
TUN	TUNER TYPE	0
SAT	SATELLITE ENABLE	0
AUD	AUDIO SYSTEM	0
ATS	AUTO TUNING SORT	0
STD	RECEPTION STANDARD	0
SYS	COLOUR SYSTEM	0
AVI	NO. OF AV INPUTS	0
AVD	AV DUBBING	–
EEX	CHASSIS TYPE	–
SPK	SPEAKER SW ENABLED	1
EEP	EEPROM SIZE	–
ABG	AGC GAIN - BG	10
AI	AGC GAIN - I	10
AL	AGC GAIN - L	10
ADK	AGC GAIN - DK	10
MNP	NICAM PRESCALE	70
TXT	TELETEXT TYPE	–
FFT	FAST / TOP TEXT	0
VOL	VOLUME PRESCALE *	70
HYP	HYPERSOUND *	0
SCP	SCART PRESCALE *	1B
FMP	FM PRESCALE *	23

* Dolby models only

table 2.2C EEPROM Default data values.

2.3 VIF CIRCUITS

2.3.1 RF-AGC

VR101 (adjacent to the tuner)

1. Connect an RF signal such as an off-air broadcast.
2. Check the AFT is on for the current channel.
3. Adjust VR101 so that the picture and sound exhibit no noise, beat or intermodulation distortion.

2.4 DEFLECTION CIRCUITS

2.4.1 Important notes

Before making any adjustments, if you have changed the CRT, FLYBACK TRANSFORMER or made any changes in the deflection circuits; adjust the CRT bias as described in 2.6.1 steps 1 ~ 6 (*Video Circuits – Screen control*).

Check the VERTICAL BREATHING CORRECTION as follows:

1. Select the VCJ adjustment display.
2. Set the adjustment code to “01” with buttons “2” or “8” on the remote control.
3. If necessary, adjust the data value to “-31” using buttons “4” or “6” on the remote control.

2.4.2 Horizontal centre

Code 09 (H-PHASE)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to “09” with buttons “2” or “8” on the remote control.
4. Adjust the horizontal position with buttons “4” or “6” on the remote control.

2.4.3 Horizontal width

Code 06 (H-AMP)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to “06” with buttons “2” or “8” on the remote control.
4. Adjust horizontal width with the buttons “4” or “6” on the remote control.

2.4.4 East-West PCC

Code 05 (CORNER CORRECTION)
Code 03 (PARABOLA TILT)
Code 02 (PARABOLA AMP)

1. Connect an RF PAL Crosshatch signal.
2. Select the VCJ adjustment display.
3. Set the adjustment code to “05” with buttons “2” or “8” on the remote control.
4. Adjust the data value to “-25” with buttons “4” or “6” on the remote control.

5. Set the adjustment code to "03" with buttons "2" or "8" on the remote control.
6. Watching the second vertical line in from both sides of the screen (figure 2.4A), make any upper and lower distortion symmetrical using buttons "4" or "6" on the remote control.
7. Set the adjustment code to "02" with buttons "2"or "8" on the remote control.
8. Adjust the straightness of both vertical lines (figure 2.4B) using buttons "4" or "6" on the remote control.
9. Repeat steps 1 to 8 above if necessary.
10. Connect a VCR and play a PAL-Monoscope alignment tape.
11. Make sure the horizontal width and horizontal centre are correct. If necessary readjust Horizontal Centre ("09") and Horizontal Width ("06") again.

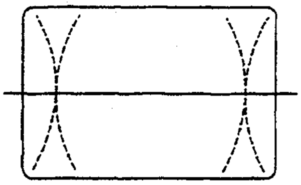


fig. 2.4A

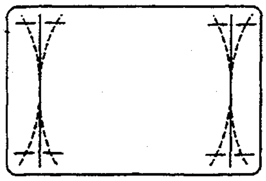


fig. 2.4B

2.4.5 Height and linearity

Code 00 (V-AMP)
Code 04 (V-LIN)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to "00" (V-AMP) with buttons "2" or "8" on the remote control.
4. Adjust the circle to a true circle with buttons "4" or "6" on the remote control.
5. Set the adjustment code to "04" (V-LIN) with buttons "2" or "8" on the remote control.
6. Adjust the linearity to be the same for the top and bottom halves of the circle using buttons "4" or "6" on the remote control.
7. Set the adjustment code to "00" (V-AMP) with buttons "2" or "8" on the remote control.
8. Readjust V-AMP with buttons "4" or "6".
9. Repeat the steps above, if necessary.

2.4.6 Vertical centre

Code 08 (V-SHIFT)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to "08" (V-SHIFT) with buttons "2" or "8" on the remote control.
4. Adjust the centre line of picture to be within +/- 3mm from the vertical centre on the screen using buttons "4" or "6" on the remote control.

2.4.7 60Hz Deflection circuit offsets

Code 14 (V-AMP 60)
Code 15 (P-AMP 60)
Code 16 (H-AMP 60)
Code 17 (V-SHIFT 60)
Code 18 (H-PHASE 60)

1. Connect an RF 60Hz Crosshatch signal.
2. Select the VCJ adjustment display.

3. Select each adjustment code in turn with buttons “2” or “8” on the remote control and adjust each item to the figures shown in table 2.4C below using buttons “4” or “6” on the remote control.

CODE:	**14**	**15**	**16**	**17**	**18**
VALUE:	+7	+2	-2	+8	-5

table 2.4C 60Hz adjustment offsets

2.5 CRT CIRCUITS

2.5.1 White balance

Code 0A (B-DRIVE)
Code 0B (G-DRIVE)
Code 0C (R-DRIVE)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment codes to “0A”, “0B” and “0C” in turn and pre-adjust each to “+10”.
4. Adjust codes “0A” and “0C” to adjust the white balance.

2.5.2 Focus

FOCUS control on the Flyback Transformer

1. Connect an RF signal such as an off-air broadcast.
2. Adjust the FOCUS control for the best overall focus.

2.6 VIDEO CIRCUITS

Perform the following adjustments after adjusting the Deflection circuits. Allow the TV to warm up for 20 minutes before proceeding

2.6.1 Brightness and Contrast

SCREEN control on the Flyback Transformer
Code 0F (COLOUR SATURATION)
Code 0E (BRIGHTNESS)
Code 0D (CONTRAST)
BEAM CURRENT (using connector TP adjacent to the Flyback Transformer)

1. Connect an RF Crosshatch signal.
2. Select the VCJ adjustment display.
3. Make sure that the Screen Up/Down Request Bit is set to “00”. If not, adjust the SCREEN control on the Flyback Transformer.
4. Change the external signal to a Colour-bar.
5. Readjust the SCREEN control to give “00”.
6. Repeat steps 1 to 5 until the Screen Up/Down Request Bit is “00” for both signals.
7. Connect an RF Colour-bar signal.
8. Set the adjustment code to “0F” with buttons “2” or “8” on the remote control.
9. Adjust the data value to “-32” with buttons “4” or “6” on the remote control.
10. Set the adjustment code to “0E” with buttons “2” or “8” on the remote control.

11. Adjust using buttons “4” or “6” so that a slight difference in brightness can be seen between blue and black areas.
12. Set the adjustment code to “0D” with the buttons “2” or “8” on the remote control.
13. Connect a DC ammeter’s “+” lead to connector TP pin 1 on the MAIN-PCB and the “–” lead to connector TP pin 2.
14. Adjust the beam current using buttons “4” or “6” on the remote control to 1150±20µA.
15. Check, and if necessary, readjust the BRIGHTNESS, code “0E”.
16. Check that the Screen Up/Down Request Bit is “00”. If not, repeat steps 1 to 13 above.
17. Now proceed to the Colour Output adjustment.

2.6.2 Colour output

Make this adjustment only after adjusting the White Balance, Brightness and Contrast.

Code 0F (COLOUR SATURATION)

1. Connect an RF Colour-bar signal.
2. Select the VCJ adjustment display.
3. Set the adjustment code to “0F” with buttons “2” or “8” on the remote control.
4. Connect an oscilloscope to the junction of R673 and IC660 Pin 9 (BLUE-OUT) on the CRT PCB).
5. Make adjustments using buttons “4” or “6” on the remote control until the waveform is as shown in figure 2.6A.
6. Increase the resulting data value by five steps.

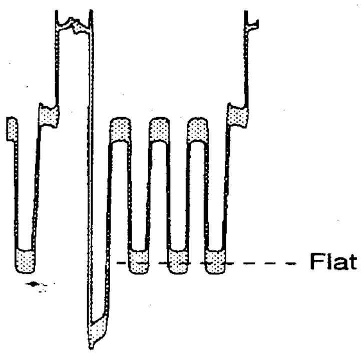


fig. 2.6A

2.7 POWER CIRCUIT

2.7.1 B4 Voltage

VR951 (on main PCB next to the SMT)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Push the OPTIMUM button on the remote control.
3. Connect a DC voltmeter’s “+” lead to TP91 on the MAIN PCB and the “–” lead to GROUND.
4. Adjust VR951 so that the voltage is 145±2V.

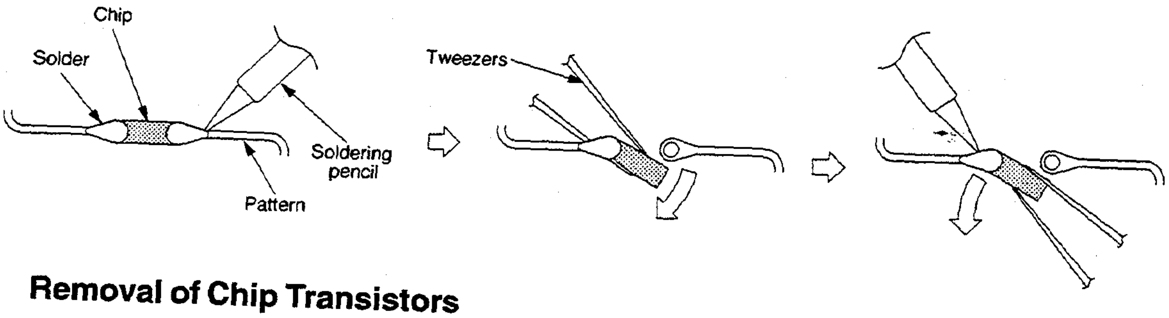
3 CHIP PARTS REPLACEMENT

Some resistors, shorting jumpers (0Ω resistor), ceramic capacitors, transistors and diodes are chip parts (i.e. surface mount or SMD parts). When replacing these parts, note the following precautions:

- Use fine tipped, well insulated soldering iron of about 30 watts and tweezers.
- Melt the solder and remove the Chip Parts carefully so as not to tear off the copper foil from the printed circuit board.
- Discard removed chips, do not re-use them.
- Do not apply heat for more than 3 seconds to new Chip Parts.
- Avoid using a rubbing action when soldering.
- Take care not to scratch or damage the Chip Parts when soldering.
- Supplementary cementing is not required.

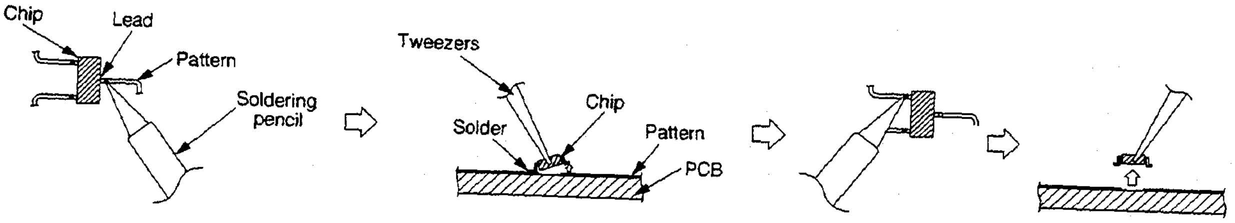
3.1 Removal of Chip Resistors, capacitors, etc.

1. Grasp the part with tweezers. Melt the solder at both sides alternately and remove the one side of the part with a twisting motion.
2. Melt the solder at the other side and remove the part.


Chip
Solder
Soldering pencil
Pattern
Tweezers

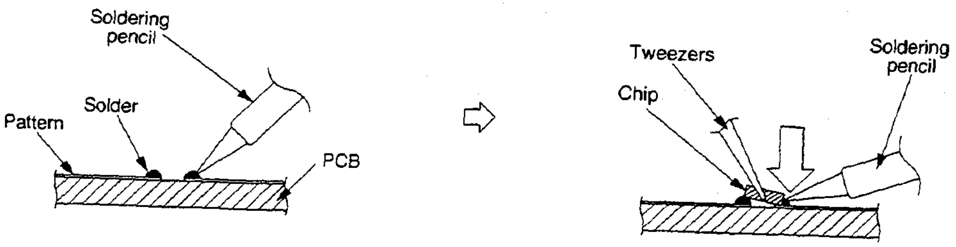
3.2 Removal of Chip Transistors

1. Melt the solder of one lead, and lift the side of that lead upward.
2. Simultaneously melt the solder of the two remaining leads and lift the part from the PCB.


Chip
Lead
Pattern
Soldering pencil
Tweezers
Chip
Solder
Pattern
PCB

3.3 Replacement

1. Pre-solder the contact points on the circuit pattern.
2. Press the part downward with tweezers and apply the soldering iron as shown in the figure.


Soldering pencil
Solder
Pattern
PCB
Tweezers
Soldering pencil
Chip

4 PARTS LIST

4.1 NOTES

4.1.1 Model-specific parts

As this service manual covers more than one model, the Service Parts List indicates where certain parts are model-specific:

CODE	MODEL
1	28AV1GS
2	28AV1G-S
3	28AV1GDS
4	28AV1GD-S
5	28AV1S-S
6	28AV1SD-S
7	28AV1ED-S

If there is no such indication then the parts are common to *all* models covered by this manual.

4.1.2 Ordering

In order to expedite delivery of replacement parts, please specify:

1. Model number and Serial number
2. Part Number and Description
3. Quantity

Unless full information is provided a delay in execution of the order may result.

4.1.3 Safety

Safety Critical components are indicated thus: ⚠ and must only be replaced with original Mitsubishi parts.

4.1.4 Component tolerances

Component value tolerances are coded as shown in table 3.1A below.

B	C	D	F	G	J	K	M	N	V	X	Z	P	Q
±0.1	±.025	±0.5	±1	±2	±5	±10	±20	±30	+10 -10	+40 -20	+80 -20	+100 -0	+30 -10

table 3.1A Component tolerances

4.2 SERVICE PARTS LIST – TV parts, see page 23 for Satellite tuner parts

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
CRT					
⚠		255P807010	CRT-ASSY	A66EGW83X101	
IC					
IC101	MAIN	270P341020	IC	TDA4470 C	1, 2, 3, 4, 7
IC101	MAIN	270P341050	IC	TDA4472 A	5, 6
IC201	MAIN	270P254010	IC	MC44031	
IC202	MAIN	270P263010	IC	TEA6415C	
IC301	SOUND/DOLBY	270P209010	IC	MSP3410	
IC351	MAIN	270P259010	IC	TDA7263	
IC3A1	AUDIO-PWR	270P259010	IC	TDA7263	3, 4, 6, 7
IC3A2	AUDIO-PWR	270P259010	IC	TDA7263	3, 4, 6, 7
IC3B1	AUDIO-PWR	270P259010	IC	TDA7263	
IC3D1	DOLBY	274P682010	IC	DSP56004FJ40	3, 4, 6, 7
IC3D2	DOLBY	274P683010	IC	MCM6206DP25	3, 4, 6, 7
IC3D3	DOLBY	274P685010	IC	MC68HC05C8	3, 4, 6, 7
IC3D4	DOLBY	272P966020	IC	TDA1543	3, 4, 6, 7
IC3D5	DOLBY	270P269010	IC	MCT4558CPI	3, 4, 6, 7
IC3D6	DOLBY	270P269010	IC	MCT4558CPI	3, 4, 6, 7
IC3D7	DOLBY	263P066060	IC	HEF 4066 BP	3, 4, 6, 7
IC3D8	DOLBY	267P036030	IC	AFL87F15000E1	3, 4, 6, 7
IC3D9	DOLBY	270P355030	IC	MC7812CT	3, 4, 6, 7
IC3S1*	IDENT	H27P006010	IC	TDA9845	1, 2, 3, 4*
IC3S2*	IDENT	272P655010	IC	TA7337P	1, 2, 3, 4*
IC401	MAIN	270P261010	IC	TDA8171	
IC551	MAIN	272P406010	IC	TEA 2031A	
IC660	CRT	270P207010	IC-CRT-OUTPUT	TEA5101	
IC701**	MAIN	274P755010*	IC	ST9291N7B1ECS/B10	3, 4, 6, 7
IC701**	MAIN	274P755020*	IC	ST9291N7B1ECN/B20	1, 2, 5
IC702	MAIN	274P686010	IC	ST24C08	
IC7701	TEXT	274P571030	IC	SAA5281ZP/E	1, 2, 3, 4, 5, 6
IC7701	TEXT	274P571040	IC	SAA5281ZP/H	7
IC7702	TEXT	274P570020	IC	PCB83C654P	
IC7703	TEXT	274P171010	IC	ST24C02AB1	
IC901	MAIN	272P514010	IC	TEA 2261	
IC951	MAIN	270P260010	IC	TDA8137	
TRANSISTORS					
Q102	MAIN	260P748030	TRANSISTOR	JC501-R	
Q103	MAIN	260P748030	TRANSISTOR	JC501-R	5, 6
Q105	MAIN	260P748030	TRANSISTOR	JC501-R	
Q106	MAIN	260P749030	TRANSISTOR	JA101-Q	
Q107	MAIN	260P749030	TRANSISTOR	JA101-Q	
Q108	MAIN	260P749030	TRANSISTOR	JA101-Q	
Q251	MAIN	260P748030	TRANSISTOR	JC501-R	
Q252	MAIN	260P748030	TRANSISTOR	JC501-R	
Q253	MAIN	260P748030	TRANSISTOR	JC501-R	
Q256	MAIN	260P748030	TRANSISTOR	JC501-R	

* See page 25 for serial numbers affected.

** If a capacitor is fitted on the copper side in parallel with R400, remove the capacitor when replacing IC701.

1 28AV1GS
2 28AV1G-S
3 28AV1GDS
4 28AV1GD-S
5 28AV1S-S
6 28AV1SD-S
7 28AV1ED-S

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
Q301	MAIN	260C604020	TRANSISTOR	DTC124ES	
Q302	MAIN	260C604020	TRANSISTOR	DTC124ES	
Q302	SOUND/DOLBY	260P748030	TRANSISTOR	JC501-R	
Q303	SOUND/DOLBY	260P748030	TRANSISTOR	JC501-R	
Q304	SOUND/DOLBY	260P748030	TRANSISTOR	JC501-R	
Q304	MAIN	260P748030	TRANSISTOR	JC501-R	
Q305	SOUND/DOLBY	260P748030	TRANSISTOR	JC501-R	
Q305	MAIN	260P749050	TRANSISTOR	JA101-Q,R	
Q306	SOUND/DOLBY	260P748030	TRANSISTOR	JC501-R	
Q307	DOLBY	260P749030	TRANSISTOR	JA101-Q	3, 4, 6, 7
Q308	DOLBY	260P749030	TRANSISTOR	JA101-Q	3, 4, 6, 7
Q3A03	AUDIO-PWR	260C604020	TRANSISTOR	DTC124ES	3, 4, 6, 7
Q3A04	AUDIO-PWR	260C604020	TRANSISTOR	DTC124ES	3, 4, 6, 7
Q3A05	AUDIO-PWR	260C604020	TRANSISTOR	DTC124ES	3, 4, 6, 7
Q3A06	AUDIO-PWR	260C604020	TRANSISTOR	DTC124ES	3, 4, 6, 7
Q3A07	AUDIO-PWR	260C604021	TRANSISTOR	DTC124ES	
Q3D1	DOLBY	260P748030	TRANSISTOR	JC501-R	3, 4, 6, 7
Q3D2	DOLBY	260P748030	TRANSISTOR	JC501-R	3, 4, 6, 7
Q3D3	DOLBY	260P356010	TRANSISTOR	2SC1906	3, 4, 6, 7
Q3D4	DOLBY	260P748030	TRANSISTOR	JC501-R	3, 4, 6, 7
Q3D5	DOLBY	260P748030	TRANSISTOR	JC501-R	3, 4, 6, 7
Q3D6	DOLBY	260P748030	TRANSISTOR	JC501-R	3, 4, 6, 7
Q3D7	DOLBY	260P748030	TRANSISTOR	JC501-R	3, 4, 6, 7
Q3D8	DOLBY	260P748030	TRANSISTOR	JC501-R	3, 4, 6, 7
Q3S01*	IDENT	260P543030	TRANSISTOR	JC501-R	1, 2, 3, 4*
Q3S02*	IDENT	260C003030	TRANSISTOR	2SC2058S-Q	1, 2, 3, 4*
Q3S03*	IDENT	260P544040	TRANSISTOR	JA101-R	1, 2, 3, 4*
Q3S04*	IDENT	260C003030	TRANSISTOR	2SC2058S-Q	1, 2, 3, 4*
Q3S05*	IDENT	260C003030	TRANSISTOR	2SC2058S-Q	1, 2, 3, 4*
Q450	MAIN	260P748030	TRANSISTOR	JC501-R	
Q451	MAIN	260P387010	TRANSISTOR	2SC2236-O,Y	
Q501	MAIN	260P748030	TRANSISTOR	JC501-R	
Q551	MAIN	260P422010	TRANSISTOR	2SC2482	
Q552	MAIN	261P007010	TRANSISTOR	S2055N	
Q6A1	CRT	260P749030	TRANSISTOR	JA101-Q	
Q6A2	CRT	260P748030	TRANSISTOR	JC501-R	
Q6A3	CRT	260P574020	TRANSISTOR	2SD1264A-P	
Q6A4	CRT	260P573020	TRANSISTOR	2SB940A-P	
Q6A5	CRT	260P748030	TRANSISTOR	JC501-R	
Q6A7	CRT	260P748030	TRANSISTOR	JC501-R	
Q6A8	CRT	260P748030	TRANSISTOR	JC501-R	
Q6A9	CRT	260P748030	TRANSISTOR	JC501-R	
Q6E2	CRT	260P748030	TRANSISTOR	JC501-R	
Q6E3	CRT	260P748030	TRANSISTOR	JC501-R	
Q6E4	CRT	260P748030	TRANSISTOR	JC501-R	
Q6E5	CRT	260P748030	TRANSISTOR	JC501-R	
Q6E7	CRT	260P748030	TRANSISTOR	JC501-R	
Q6E8	CRT	260C255040	TRANSISTOR	2SA950-Y (FORMED)	
Q701	MAIN	260C559050	TRANSISTOR	2SC1740S-E (FORMED)	
Q702	MAIN	260P748030	TRANSISTOR	JC501-R	
Q703	MAIN	260P749030	TRANSISTOR	JA101-Q	

* See page 25 for serial numbers affected.

1 28AV1GS	**3** 28AV1GDS	**5** 28AV1S-S	**7** 28AV1ED-S
2 28AV1G-S	**4** 28AV1GD-S	**6** 28AV1SD-S	

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
Q704	MAIN	260P748030	TRANSISTOR	JC501-R	
Q705	MAIN	260P749030	TRANSISTOR	JA101-Q	
Q706	MAIN	260P749030	TRANSISTOR	JA101-Q	
Q707	MAIN	260P748030	TRANSISTOR	JC501-R	
Q708	MAIN	260P748030	TRANSISTOR	JC501-R	
Q710	MAIN	260P748030	TRANSISTOR	JC501-R	
Q711	MAIN	260P748030	TRANSISTOR	JC501-R	
Q713	MAIN	260P748020	TRANSISTOR	JC501-Q,R	
Q714	MAIN	260P748030	TRANSISTOR	JC501-R	
Q715	MAIN	260P748030	TRANSISTOR	JC501-R	
Q716	MAIN	260P748030	TRANSISTOR	JC501-R	
Q901	MAIN	261P006010	TRANSISTOR	S2000N	
Q902	MAIN	260P748030	TRANSISTOR	JC501-R	
Q951	MAIN	260P748030	TRANSISTOR	JC501-R	
Q952	MAIN	260P387010	TRANSISTOR	2SC2236-O,Y	
DIODES					
D102	MAIN	264P370010	DIODE	1N4148	
D201	MAIN	264P370010	DIODE	1N4148	
D251	MAIN	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D252	MAIN	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D253	MAIN	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D254	MAIN	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D255	MAIN	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D256	MAIN	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D257	MAIN	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D258	MAIN	264P460020	DIODE	EQA02-05CD/RD5.1EB1	
D301	MAIN	264P370010	DIODE	1N4148	
D302	SOUND/DOLBY	264P370010	DIODE	1N4148	
D303	SOUND/DOLBY	264P370010	DIODE	1N4148	
D304	SOUND/DOLBY	264P370010	DIODE	1N4148	
D3D1	DOLBY	264P370010	DIODE	1N4148	3, 4, 6, 7
D3D2	DOLBY	264P370010	DIODE	1N4148	3, 4, 6, 7
D3D3	DOLBY	264P370010	DIODE	1N4148	3, 4, 6, 7
D401	MAIN	264P374020	DIODE	1N4003ID	
D501	MAIN	264P463020	DIODE	EQA02-08C/RD8.2 EB2	
D502	MAIN	264P370010	DIODE	1N4148	
D503	MAIN	264P371010	DIODE	BYV95B	
D504	MAIN	264P371010	DIODE	BYV95B	
D505	MAIN	264P375020	DIODE	BY228 (FORMED)	
D506	MAIN	264P378020	DIODE	BYW96E (FORMED)	
D507	MAIN	264P371010	DIODE	BYV95B	
D508	MAIN	264P371010	DIODE	BYV95B	
D509	MAIN	264P371010	DIODE	BYV95B	
D560	MAIN	264P370010	DIODE	1N4148	
D561	MAIN	264P493020	DIODE	RD39FB2	
D562	MAIN	264P370010	DIODE	1N4148	
D563	MAIN	264P370010	DIODE	1N4148	
D601	CRT	264P370010	DIODE	1N4148	
D655	CRT	264P370010	DIODE	1N4148	
D656	CRT	264P370010	DIODE	1N4148	

* See page 25 for serial numbers affected.

1 28AV1GS
2 28AV1G-S
3 28AV1GDS
4 28AV1GD-S
5 28AV1S-S
6 28AV1SD-S
7 28AV1ED-S

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
D657	CRT	264P370010	DIODE	1N4148	
D6A1	CRT	264P370010	DIODE	1N4148	
D6A2	CRT	264P374020	DIODE	1N4003ID	
D6A3	CRT	264P374020	DIODE	1N4003ID	
D6A4	CRT	264P370010	DIODE	1N4148	
D701	MAIN	264P460020	DIODE	EQA02-05CD/RD5.EB1	
D702	MAIN	264P460020	DIODE	EQA02-05CD/RD5.EB1	
D703	MAIN	264P461070	DIODE	EQA02-06D/RD6.2EB2	
D704	MAIN	264P370010	DIODE	1N4148	
D705	MAIN	264P370010	DIODE	1N4148	
D706	MAIN	264P465040	DIODE	EQA02-12AB/RD13EB1	
D708	MAIN	264P370010	DIODE	1N4148	
D709	MAIN	264P370010	DIODE	1N4148	
D710	MAIN	264P370010	DIODE	1N4148	
D7701	TEXT	264P370010	DIODE	1N4148	
D791	LED	264P584020	DIODE LE	SML1216W-C,D	
D901	MAIN	264P376010	DIODE	BYW56	
D902	MAIN	264P376010	DIODE	BYW56	
D903	MAIN	264P376010	DIODE	BYW56	
D904	MAIN	264P376010	DIODE	BYW56	
D905	MAIN	264P371010	DIODE	BYV95B	
D906	MAIN	264P372010	DIODE	BYV96E	
D907	MAIN	264P481060	DIODE	RD3.0FB2	
D908	MAIN	264P370010	DIODE	1N4148	
D909	MAIN	264P481060	DIODE	RD3.0FB2	
D951	MAIN	264P378020	DIODE	BYW96E (FORMED)	
D952	MAIN	264P377020	DIODE	BYW95B (FORMED)	
D953	MAIN	264P377020	DIODE	BYW95B (FORMED)	
D955	MAIN	264P461080	DIODE	EQA02-06E/RD6.2EB3	
D956	MAIN	266P010020	IC-DIODE	µPC574J-K	
D957	MAIN	264P463080	DIODE	EQA02-09C/RD9.1EB3	
D959	MAIN	264P377020	DIODE	BYW95B (FORMED)	
D968	MAIN	264P371010	DIODE	BYV95B	
FILTERS					
CF101	MAIN	296P084010	CERAMIC-TRAP	TPS5.5MW	
CF102	MAIN	296P024050	CERAMIC-TRAP	TPS6.5MB	
CF3S1*	IDENT	296P071020	CERAMIC-FILTER	STF5.74MA3	1, 2, 3, 4*
CF3S2*	IDENT	296P071020	CERAMIC-FILTER	STF5.74MA3	1, 2, 3, 4*
CF3S3*	IDENT	296P071010	CERAMIC-FILTER	STF5.5MA3	1, 2, 3, 4*
SF101	MAIN	296P138010	SAW-FILTER	G1968M 38.9MHz	1, 2, 3, 4, 5, 6
SF101	MAIN	296P144020	SAW-FILTER	OFWK3953M	7
SF301	MAIN	296P145010	SAW-FILTER	OFWK9350M	
COILS					
L101	MAIN	325C164070	COIL-PEAKING	0.47µH-J	
L102	MAIN	325C161010	COIL-PEAKING	6.8µH-K	
L103	MAIN	325C121030	COIL-PEAKING	10µH-K	
L104	MAIN	323P175040	COIL-VIF	VIF=38.9, 39.5MHz	
L106	MAIN	325C121030	COIL-PEAKING	10µH-K	
L201	MAIN	321C031090	COIL-RF	33µH-K	

* See page 25 for serial numbers affected.

1	28AV1GS	**3**	28AV1GDS	**5**	28AV1S-S	**7**	28AV1ED-S
2	28AV1G-S	**4**	28AV1GD-S	**6**	28AV1SD-S		

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
L202	MAIN	325C120090	COIL-PEAKING	4.7μH-K	
L205	MAIN	325C120010	COIL-PEAKING	1μH-M	7
L301	SOUND/DOLBY	325C120010	COIL-PEAKING	1μH-M	
L302	SOUND/DOLBY	325C120010	COIL-PEAKING	1μH-M	
L303	SOUND/DOLBY	325C120010	COIL-PEAKING	1μH-M	
L304	SOUND/DOLBY	325C120070	COIL-PEAKING	3.3μH-K	
L305	SOUND/DOLBY	325C120070	COIL-PEAKING	3.3μH-K	
L306	MAIN	325C120070	COIL-PEAKING	3.3μH-K	
L307	MAIN	325C120070	COIL-PEAKING	3.3μH-K	
L308	MAIN	325C120070	COIL-PEAKING	3.3μH-K	
L308	SOUND/DOLBY	325C120070	COIL-PEAKING	3.3μH-K	
L309	MAIN	325C120070	COIL-PEAKING	3.3μH-K	
L309	SOUND/DOLBY	325C120070	COIL-PEAKING	3.3μH-K	
L310	MAIN	325C120070	COIL-PEAKING	3.3μH-K	
L311	MAIN	325C120070	COIL-PEAKING	3.3μH-K	
L314	MAIN	325C120070	COIL-PEAKING	3.3μH-K	
L315	MAIN	325C120070	COIL-PEAKING	3.3μH-K	
L316	MAIN	325C120070	COIL-PEAKING	3.3μH-K	
L317	MAIN	325C120070	COIL-PEAKING	3.3μH-K	
L3B01	AUDIO-PWR	325C108070	COIL-PEAKING	1000μH-J	
L3D1	DOLBY	325C120090	COIL-PEAKING	4.7μH-K	3, 4, 6, 7
L3D10	DOLBY	325C121030	COIL-PEAKING	10μH-K	3, 4, 6, 7
L3D11	DOLBY	325C121030	COIL-PEAKING	10μH-K	3, 4, 6, 7
L3D2	DOLBY	325C120090	COIL-PEAKING	4.7μH-K	3, 4, 6, 7
L3D3	DOLBY	325C120090	COIL-PEAKING	4.7μH-K	3, 4, 6, 7
L3D4	DOLBY	325C120090	COIL-PEAKING	4.7μH-K	3, 4, 6, 7
L3D5	DOLBY	325C120090	COIL-PEAKING	4.7μH-K	3, 4, 6, 7
L3D6	DOLBY	325C120090	COIL-PEAKING	4.7μH-K	3, 4, 6, 7
L3D7	DOLBY	325C120090	COIL-PEAKING	4.7μH-K	3, 4, 6, 7
L3D8	DOLBY	325C121030	COIL-PEAKING	10μH-K	3, 4, 6, 7
L3D9	DOLBY	325C121030	COIL-PEAKING	10μH-K	3, 4, 6, 7
L3S01*	IDENT	327P074010	COIL-VIF		1, 2, 3, 4*
L3S02*	IDENT	327P079010	COIL-SIF		1, 2, 3, 4*
L3S03*	IDENT	325C121030	COIL-PEAKING	10μH	1, 2, 3, 4*
L3S04*	IDENT	325C121030	COIL-PEAKING	10μH	1, 2, 3, 4*
L401	MAIN	411P001070	LEAD-FERRITE		
L501	MAIN	409P006080	COIL-FILTER	6800μH-J	
L502	MAIN	321C030010	COIL-RF	1μH-K	
L503	MAIN	411D009020	CORE-FERRITE		
L504	MAIN	409P749010	COIL-PCC-CHOKE	15μH	
L505	MAIN	409P748010	COIL-PCC	1μH	
L551	MAIN	333P012010	COIL-HORIZ-LIN		
L6A1	CRT	411P001070	LEAD-FERRITE		
L6A2	CRT	325C121050	COIL PEAKING	15μH-K	
L6A3	CRT	325C121050	COIL PEAKING	15μH-K	
L6A4	CRT	325C121050	COIL PEAKING	15μH-K	
L6A5	CRT	325C101040	COIL PEAKING	12μH-K	
L701	MAIN	325C121070	COIL PEAKING	22μH-K	
L702	MAIN	325C121070	COIL PEAKING	22μH-K	
L7701	TEXT	325C120010	COIL PEAKING	1μH-M	
L7702	TEXT	325C120070	COIL PEAKING	3.3μH-K	

* See page 25 for serial numbers affected.

1 28AV1GS	**3** 28AV1GDS	**5** 28AV1S-S	**7** 28AV1ED-S
2 28AV1G-S	**4** 28AV1GD-S	**6** 28AV1SD-S	

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
L901	MAIN	321C030050	COIL-RF	2.2µH-K	
L903	MAIN	411P001070	LEAD-FERRITE		
L905	MAIN	411P001070	LEAD-FERRITE		
L951	MAIN	325D059060	COIL-PEAKING	390µH-K	
L955	MAIN	321C031090	COIL-RF	33µH-K	
L991	PWR-SUB	351P047020	LINE-FILTER		
L993	PWR-SUB	351P011020	LINE-FILTER		
⚠		409P564050	COIL-DEGAUSSING		
TRANSFORMERS					
⚠ T551	MAIN	334P243010	TRANS-FLYBACK		
T552	MAIN	336P017010	TRANS-HORIZ-DRIVE		
⚠ T901	MAIN	350P646020	TRANS POWER		1, 2, 5
⚠ T901	MAIN	350P663010	TRANS-POWER		3, 4, 6, 7
VARIABLE RESISTORS					
VR101	MAIN	127C380080	VR-SEMIFIXED	1/5W B10K-M	
VR951	MAIN	127C380090	VR-SEMIFIXED	1/5W B20K-M	
RESISTORS					
⚠ R352	MAIN	103P378060	R-FUSE	1/4W 3.3-J	
⚠ R353	MAIN	103P378060	R-FUSE	1/4W 3.3-J	
⚠ R3A09	AUDIO-PWR	103P378060	R-FUSE	1/4W 3.3-J	3, 4, 6, 7
⚠ R3A10	AUDIO-PWR	103P378060	R-FUSE	1/4W 3.3-J	3, 4, 6, 7
⚠ R3A11	AUDIO-PWR	103P378060	R-FUSE	1/4W 3.3-J	3, 4, 6, 7
⚠ R3A12	AUDIO-PWR	103P378060	R-FUSE	1/4W 3.3-J	3, 4, 6, 7
⚠ R3B01	AUDIO-PWR	103P378060	R-FUSE	1/4W 3.3-J	
⚠ R3B02	AUDIO-PWR	103P378060	R-FUSE	1/4W 3.3-J	
R3D64	DOLBY	103P544000	R-NETWORK	1/8W 18K-Jx4	3, 4, 6, 7
R508	MAIN	102P243050	R-CEMENT-METAL-SUS	5W 6.8K-K/J	
R511	MAIN	102P229010	R-CEMENT-WIRE-SUS	10W 8.2-K/J	
⚠ R512	MAIN	103P442020	R-FUSE-METAL	1W 560-K/J	
⚠ R513	MAIN	103P398040	R-FUSE	1/2W 2.2-J	
⚠ R514	MAIN	103P397090	R-FUSE	1/2W 0.82-J	
⚠ R516	MAIN	103P397090	R-FUSE	1/2W 0.82-J	
⚠ R671	CRT	103P447080	R-FUSE-METAL	1W 0.68-K/J	
⚠ R6B1	CRT	103P370010	R-FUSE	1/4W 10-J	
⚠ R6B4	CRT	103P392050	R-FUSE	1/2W 1.0K-J	
⚠ R6B6	CRT	103P370050	R-FUSE	1/4W 22-J	
⚠ R6B7	CRT	103P370010	R-FUSE	1/4W 10-J	
⚠ R6B8	CRT	103P392050	R-FUSE	1/2W 1.0K-J	
R921	MAIN	109D074010	R-CEMENT-METAL	5W 1.8K-K/J	
⚠ R981	MAIN	109P913050	R-COMPOSITION	1/2W 6.8M-J	
⚠ R982	MAIN	109P913050	R-COMPOSITION	1/2W 6.8M-J	
R991	POWER-SUB	102P087040	R-CEMENT-WIRE	10W 4.7-K	
⚠ R992	POWER-SUB	109P911090	R-COMPOSITION	1/2W 470K-J	
CAPACITORS					
C509	MAIN	172P171060	C-M-PLASTIC-PP	1600V 0.018µF-J	
C5A3	MAIN	172P942040	C-M-PLASTIC-PP	2000V 9100pF-J	
C5B1	MAIN	172P940090	C-M-PLASTIC-PP	2000V 2200pF-J	
C904	MAIN	185D059040	C-ELECTROLYTIC	385V/400V 150µF-M	

* See page 25 for serial numbers affected.

1 28AV1GS
2 28AV1G-S
3 28AV1GDS
4 28AV1GD-S
5 28AV1S-S
6 28AV1SD-S
7 28AV1ED-S

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
⚠ C981	MAIN	189P091010	C-CERAMIC-AC	AC400V E4700pF-M	
⚠ C991	PWR-SUB	189P117030	C-M-POLYESTER-AC	AC275V 0.22µF-M	
SWITCHES					
S701	MAIN	432P066010	SW-KEY-BOARD		
S702	MAIN	432P066030	SW-KEY-BOARD		
S703	MAIN	432P066030	SW-KEY-BOARD		
S704	MAIN	432P066030	SW-KEY-BOARD		
S705	MAIN	432P066030	SW-KEY-BOARD		
⚠ S991	POWER-SUB	432C048010	SW-PUSH	AC250V 5A/80A	
MISCELLANEOUS					
CR5M1	MAIN	149P008010	CR-MULTIPLE	470pF, 3.6M-K	
⚠ F991	PWR-SUB	283D047040	FUSE	T2A	7
⚠ F991	PWR-SUB	283D091060	FUSE	T3.15AH	1, 2, 3, 4, 5, 6
J251	MAIN	452C080020	21 PIN-SCART		
J252	MAIN	452C080020	21 PIN-SCART		
⚠ J601	CRT	449C126010	CRT SOCKET		
J3A01	AUDIO-PWR	440C237020	TERMINAL-SP-8P		3, 4, 6, 7
⚠ PC951	MAIN	268P068010	PHOTO COUPLER	TCDT1124G	
⚠ RP991	POWER-SUB	265P071050	POSISTOR	PTH451C41BG180N	
SP391/3		940B630001	ASSY-SPEAKER-SYSTEM	AV1 WITH WOOFER	
SP392		940B630002	ASSY-SPEAKER-SYSTEM	AV1 WITHOUT WOOFER	
TU101	MAIN	295P430020	TUNER-TV	UV1315/IEC	
X301	SOUND/DOLBY	285P225010	QUARTZ-CRYSTAL	AT-51 18.432MHz	
X3D1	DOLBY	MELX017010	QUARTZ-CRYSTAL	4MHz	3, 4, 6, 7
X3S01*	IDENT	285P204020	QUARTZ-CRYSTAL	10MHz	1, 2, 3, 4*
X601	MAIN	285P142020	QUARTZ-CRYSTAL	17.734475MHz	
X602	MAIN	285P143020	QUARTZ-CRYSTAL	14.31818MHz	
X701	MAIN	285P139040	QUARTZ-CRYSTAL	12MHz	
X7701	TEXT	285P157010	QUARTZ-CRYSTAL	27MHz	
⚠ Z552	MAIN	299P193010	PROTECTOR	2000	
Z701	MAIN	939P580020	IR-PHOTO-MODULE	TFMK 5330	
⚠ Z951	MAIN	299P193010	PROTECTOR	2000	1, 2, 5
⚠ Z951	MAIN	299P193030	PROTECTOR	3150	3, 4, 6, 7
⚠ Z952	MAIN	299P193070	PROTECTOR	5000	
⚠ Z953	MAIN	299P193000	PROTECTOR	1600	
⚠ Z968	MAIN	299P193000	PROTECTOR	1600	
PCB ASSEMBLIES					
⚠		920A416005	ASSY-PCB-MAIN		4
⚠		920A416006	ASSY-PCB-MAIN		6
⚠		920A416007	ASSY-PCB-MAIN		7
⚠		920A416008	ASSY-PCB-MAIN		3
⚠		920A416009	ASSY-PCB-MAIN		1
⚠		920A416010	ASSY-PCB-MAIN		5
⚠		920A416012	ASSY-PCB-MAIN		2
⚠		930C899008	ASSY-PCB-VM/CRT		
⚠		930C900001	ASSY-PCB-POWER-SUB		7
⚠		930C900002	ASSY-PCB-POWER-SUB		1, 2, 3, 4, 5, 6
⚠		930C901001	ASSY-PCB-LED		
⚠		930C904002	ASSY-PCB-AUDIO-PWR		2, 1, 5

* See page 25 for serial numbers affected.

1	28AV1GS	**3**	28AV1GDS	**5**	28AV1S-S	**7**	28AV1ED-S
2	28AV1G-S	**4**	28AV1GD-S	**6**	28AV1SD-S		

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
⚠		930C904003	ASSY-PCB-AUDIO-PWR		3, 4, 6, 7
⚠		930C909001	ASSY-PCB-TEXT		1, 2, 3, 4, 5, 6
⚠		930C909002	ASSY-PCB-TEXT		7
⚠		930C910012	ASSY-PCB-SOUND		1, 2
⚠		930C910014	ASSY-PCB-SOUND		5
⚠		930C911008	ASSY-PCB-DOLBY		4
⚠		930C911010	ASSY-PCB-DOLBY		7
⚠		930C911011	ASSY-PCB-DOLBY		3
⚠		930C911016	ASSY-PCB-DOLBY		6
MECHANICAL AND COSMETIC					
⚠		246C022070	AC-POWER-CORD/PLUG		
		669D212040	SCREW-TB-BIND	D=3 L=10 83AF	
		669D218070	SCREW SEMS M5x30	CRT fixing	
		669D220030	SCREW M3x10		
		669D221040	SCREW M4x12		
		669D221060	SCREW M4x16	Back Cover fixing	
⚠		700C605000	ASSY-BACK-COVER		2
⚠		700C605010	ASSY-BACK-COVER		4
⚠		700C605020	ASSY-BACK-COVER		3
⚠		700C605050	ASSY-BACK-COVER		5
⚠		700C605060	ASSY-BACK-COVER		6
⚠		700C607020	ASSY-BACK-COVER		7
⚠		700C607090	ASSY-BACK-COVER		1
		701D606010	ASSY-CABINET-FRONT		7
		701D606050	ASSY-CABINET-FRONT		2
		701D606060	ASSY-CABINET-FRONT		4
		701D606070	ASSY-CABINET-FRONT		3
		701D607050	ASSY-CABINET-FRONT		5
		701D607060	ASSY-CABINET-FRONT		6
		701D607090	ASSY-CABINET-FRONT		1
		702B962020	ASSY-DOOR-CONT		5
		702B963020	ASSY-DOOR-SAT		5
		752C602000	ASSY-DOOR-SAT		6
		752C602010	ASSY-DOOR-SAT		7
		752C602080	ASSY-DOOR-SAT		2
		752C602080	ASSY-DOOR-SAT		4
		752C602080	ASSY-DOOR-SAT		3
		752C602080	ASSY-DOOR-SAT		1
		752C603030	ASSY-DOOR-CONT		3, 4, 6, 7
		752C603040	ASSY-DOOR-CONT		2
		754C600050	ASSY-BUTTON-POWER		
		761C550010	DOOR-CATCH	DOOR CONT	
		761C573010	DOOR-CLIP	DOOR SAT	
ACCESSORIES					
		244D279020	SPEAKER CABLE		3, 4, 6, 7
		290P054070	TRANSMITTER-REMOTE-CONTROL		
		801C280010	PACKING-CASE		
		803A400010	CUSHION-SET		
		831D296040	PACKING-BAG		

* See page 25 for serial numbers affected.

1 28AV1GS
2 28AV1G-S
3 28AV1GDS
4 28AV1GD-S
5 28AV1S-S
6 28AV1SD-S
7 28AV1ED-S

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
		871C601050	SERVICE MANUAL		
		872C121050	IB COLOUR		2
		872C121080	IB COLOUR		5
		872C123050	IB-COLOUR		3, 4
		872C123060	IB-COLOUR		6
		872C123070	IB-COLOUR		7
		872C124020	IB-COLOUR		1
		926P035010	FRONT SURROUND SPEAKER	1 PIECE	3, 4, 6, 7
		926P035020	REAR SURROUND SPEAKER	1 PIECE	3, 4, 6, 7

*** PCB-IDENT (which disables DK reception) was only fitted to early models as shown:**

MODEL	SERIAL NOS.
28AV1GS	30 001 ~ 30 050
28AV1G-S	30 001 ~ 30 700
28AV1GDS	30 001 ~ 30 050
28AV1GD-S	30 001 ~ 30 100

SATELLITE TUNER PARTS

ICs

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
IC100	SAT	270P315010	IC SAT	STV0030	
IC101	SAT	263P053060	IC	4053BP	
IC102	SAT	263P053060	IC	4053BP	
IC104	SAT	270P355030	IC	MC7812CT	
IC105	SAT	274P681090	IC-C-MOS	ST9291J5OA/A90	
IC106	SAT	274P747010	IC-C-MOS	16K E^{2}PROM	
IC108	SAT	270P316010	IC REG (Includes insulator)	LM317T	
IC109	SAT	270P355010	IC	MC7805CT	

TRANSISTORS

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
Q102	SAT	260P748030	TRANSISTOR	JC501-R	
Q103	SAT	260P749030	TRANSISTOR	JA101-Q	
Q104	SAT	260P748030	TRANSISTOR	JC501-R	
Q105	SAT	260P748030	TRANSISTOR	JC501-R	
Q106	SAT	260P748030	TRANSISTOR	JC501-R	
Q107	SAT	260P748030	TRANSISTOR	JC501-R	
Q108	SAT	260P749030	TRANSISTOR	JA101-Q	
Q112	SAT	260P749030	TRANSISTOR	JA101-Q	
Q113	SAT	260P749030	TRANSISTOR	JA101-Q	
Q114	SAT	260P748030	TRANSISTOR	JC501-R	
Q115	SAT	260P749030	TRANSISTOR	JA101-Q	
Q116	SAT	260P748030	TRANSISTOR	JC501-R	
Q117	SAT	260P748030	TRANSISTOR	JC501-R	
Q118	SAT	260P748030	TRANSISTOR	JC501-R	
Q119	SAT	260P748030	TRANSISTOR	JC501-R	
Q120	SAT	260P748030	TRANSISTOR	JC501-R	
Q121	SAT	260P748030	TRANSISTOR	JC501-R	
Q122	SAT	260P748030	TRANSISTOR	JC501-R	
Q123	SAT	260P748030	TRANSISTOR	JC501-R	
Q124	SAT	260P748030	TRANSISTOR	JC501-R	
Q125	SAT	260P545010	TRANSISTOR	BC327	
Q126	SAT	260P748030	TRANSISTOR	JC501-R	
Q127	SAT	260P545010	TRANSISTOR	BC327	
Q128	SAT	260P545010	TRANSISTOR	BC327	
Q129	SAT	260P748030	TRANSISTOR	JC501-R	
Q130	SAT	260P748030	TRANSISTOR	JC501-R	
Q131	SAT	260P748030	TRANSISTOR	JC501-R	

1	28AV1GS
2	28AV1G-S
3	28AV1GDS
4	28AV1GD-S
5	28AV1S-S
6	28AV1SD-S
7	28AV1ED-S

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
Q132	SAT	260P749030	TRANSISTOR	JA101-Q	
Q135	SAT	260P748030	TRANSISTOR	JC501-R	
Q136	SAT	260P748030	TRANSISTOR	JC501-R	
Q137	SAT	260P748030	TRANSISTOR	JC501-R	
Q138	SAT	260P748030	TRANSISTOR	JC501-R	
Q139	SAT	260P748030	TRANSISTOR	JC501-R	
DIODES					
D100	SAT	264P370010	DIODE	1N4148	
D101	SAT	264P370010	DIODE	1N4148	
D102	SAT	264P370010	DIODE	1N4148	
D103	SAT	264P370010	DIODE	1N4148	
D109	SAT	264P370010	DIODE	1N4148	
D110	SAT	264P370010	DIODE	1N4148	
D111	SAT	264P370010	DIODE	1N4148	
D112	SAT	264P370010	DIODE	1N4148	
D113	SAT	264P370010	DIODE	1N4148	
COILS					
L100	SAT	325C105090	COIL-PEAKING	4.7µH-J	
L101	SAT	325C105090	COIL-PEAKING	4.7µH-J	
L103	SAT	325C120090	COIL-PEAKING	4.7µH-K	
L104	SAT	325C106060	COIL-PEAKING	18µH-J	
L105	SAT	325C106040	COIL-PEAKING	12µH-J	
RESISTORS					
R108	SAT	103P400090	R-M-CHIP	1/10W 47-J	
R109	SAT	103P400090	R-M-CHIP	1/10W 47-J	
R110	SAT	103P401030	R-M-CHIP	1/10W 100-J	
R111	SAT	103P404010	R-M-CHIP	1/10W 22K-J	
R112	SAT	103P403030	R-M-CHIP	1/10W 4.7K-J	
R113	SAT	103P404040	R-M-CHIP	1/10W 39K-J	
R114	SAT	103P404010	R-M-CHIP	1/10W 22K-J	
R115	SAT	103P404040	R-M-CHIP	1/10W 39K-J	
R116	SAT	103P403030	R-M-CHIP	1/10W 4.7K-J	
R117	SAT	103P404080	R-M-CHIP	1/10W 82K-J	
R118	SAT	103P405020	R-M-CHIP	1/10W 180K-J	
R119	SAT	103P402040	R-M-CHIP	1/10W 820-J	
R120	SAT	103P405020	R-M-CHIP	1/10W 180K-J	
R121	SAT	103P404080	R-M-CHIP	1/10W 82K-J	
R122	SAT	103P406000	R-M-CHIP	1/10W 820K-J	
R123	SAT	103P402040	R-M-CHIP	1/10W 820-J	
R126	SAT	103P406020	R-M-CHIP	1/10W 1.2M-J	
R127	SAT	103P404090	R-M-CHIP	1/10W 100K-J	
R128	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R129	SAT	103P404080	R-M-CHIP	1/10W 82K-J	
R130	SAT	103P403060	R-M-CHIP	1/10W 8.2K-J	
R131	SAT	103P404000	R-M-CHIP	1/10W 18K-J	
R132	SAT	103P404090	R-M-CHIP	1/10W 100K-J	
R133	SAT	103P404050	R-M-CHIP	1/10W 47K-J	
R134	SAT	103P404050	R-M-CHIP	1/10W 47K-J	
R135	SAT	103P406000	R-M-CHIP	1/10W 820K-J	
R136	SAT	103P402050	R-M-CHIP	1/10W 1K-J	
R137	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R138	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R139	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R140	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R142	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R143	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R144	SAT	103P402090	R-M-CHIP	1/10W 2.2K-J	
R145	SAT	103P402090	R-M-CHIP	1/10W 2.2K-J	
R146	SAT	103P404050	R-M-CHIP	1/10W 47K-J	
R147	SAT	103P404050	R-M-CHIP	1/10W 47K-J	
R148	SAT	103P404050	R-M-CHIP	1/10W 47K-J	

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
R149	SAT	103P404050	R-M-CHIP	1/10W 47K-J	
R150	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R151	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R152	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R153	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R154	SAT	103P402090	R-M-CHIP	1/10W 2.2K-J	
R155	SAT	103P402090	R-M-CHIP	1/10W 2.2K-J	
R156	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R157	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R158	SAT	103P402090	R-M-CHIP	1/10W 2.2K-J	
R159	SAT	103P402090	R-M-CHIP	1/10W 2.2K-J	
R160	SAT	103P404050	R-M-CHIP	1/10W 47K-J	
R161	SAT	103P404050	R-M-CHIP	1/10W 47K-J	
R162	SAT	103P404050	R-M-CHIP	1/10W 47K-J	
R163	SAT	103P404050	R-M-CHIP	1/10W 47K-J	
R164	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R165	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R166	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R167	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R168	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R169	SAT	103P402010	R-M-CHIP	1/10W 470-J	
R170	SAT	103P401000	R-M-CHIP	1/10W 56-J	
R171	SAT	103P402010	R-M-CHIP	1/10W 470-J	
R180	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R181	SAT	103P403030	R-M-CHIP	1/10W 4.7K-J	
R183	SAT	103P402040	R-M-CHIP	1/10W 820-J	
R184	SAT	MELX048010	R-M-CHIP	1/10W 6.2K-J	
R185	SAT	103P403080	R-M-CHIP	1/10W 12K-J	
R186	SAT	103P402020	R-M-CHIP	1/10W 560-J	
R187	SAT	103P402010	R-M-CHIP	1/10W 470-J	
R188	SAT	103P402010	R-M-CHIP	1/10W 470-J	
R189	SAT	103P402040	R-M-CHIP	1/10W 820-J	
R190	SAT	103P402010	R-M-CHIP	1/10W 470-J	
R191	SAT	103P402010	R-M-CHIP	1/10W 470-J	
R192	SAT	103P402010	R-M-CHIP	1/10W 470-J	
R193	SAT	103P402020	R-M-CHIP	1/10W 560-J	
R194	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R195	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R196	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R197	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R199	SAT	103P401030	R-M-CHIP	1/10W 100-J	
R200	SAT	103P401030	R-M-CHIP	1/10W 100-J	
R201	SAT	103P401030	R-M-CHIP	1/10W 100-J	
R203	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R204	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R206	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R207	SAT	103P403000	R-M-CHIP	1/10W 2.7K-J	
R208	SAT	103P403000	R-M-CHIP	1/10W 2.7K-J	
R209	SAT	103P409050	R-M-CHIP	1/10W 0OHM	
R210	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R211	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R212	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R213	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R214	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R215	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R216	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R217	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R218	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R219	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R220	SAT	103P404020	R-M-CHIP	1/10W 27K-J	
R221	SAT	103P403050	R-M-CHIP	1/10W 6.8K-J	
R222	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R223	SAT	103P401090	R-M-CHIP	1/10W 330-J	

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
R224	SAT	103P402010	R-M-CHIP	1/10W 470-J	
R225	SAT	103P402000	R-M-CHIP	1/10W 390-J	
R226	SAT	103P402010	R-M-CHIP	1/10W 470-J	
R227	SAT	103P404040	R-M-CHIP	1/10W 39K-J	
R228	SAT	103P404020	R-M-CHIP	1/10W 27K-J	
R229	SAT	103P403030	R-M-CHIP	1/10W 4.7K-J	
R230	SAT	103P901090	R-METAL	0.4W 560-F	
R231	SAT	103P902040	R-METAL	0.4W 910-F	
R232	SAT	MELX049010	R-METAL	1/4W 1.4K-F	
R233	SAT	103P402090	R-M-CHIP	1/10W 2.2K-J	
R234	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R235	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R236	SAT	103P900090	R-METAL	0.4W 220-F	
R239	SAT	103P402050	R-M-CHIP	1/10W 1K-J	
R240	SAT	103P404010	R-M-CHIP	1/10W 22K-J	
R241	SAT	103P403090	R-M-CHIP	1/10W 15K-J	
R242	SAT	103P403090	R-M-CHIP	1/10W 15K-J	
R245	SAT	103P402050	R-M-CHIP	1/10W 1K-J	
R246	SAT	103P404010	R-M-CHIP	1/10W 22K-J	
R247	SAT	103P404010	R-M-CHIP	1/10W 22K-J	
R248	SAT	103P404010	R-M-CHIP	1/10W 22K-J	
R249	SAT	103P404090	R-M-CHIP	1/10W 100K-J	
R250	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R251	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R252	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R253	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R260	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R261	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R262	SAT	103P401090	R-M-CHIP	1/10W 330-J	
R263	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R264	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R265	SAT	103P401070	R-M-CHIP	1/10W 220-J	
R266	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
R267	SAT	103P401030	R-M-CHIP	1/10W 100-J	
R268	SAT	103P402090	R-M-CHIP	1/10W 2.2K-J	
R270	SAT	103P402060	R-M-CHIP	1/10W 1.2K-J	
R271	SAT	103P402090	R-M-CHIP	1/10W 2.2K-J	
R272	SAT	103P404000	R-M-CHIP	1/10W 18K-J	
R273	SAT	103P403070	R-M-CHIP	1/10W 10K-J	
CAPACITORS					
C101	SAT	141P131050	C-CERAMIC-CHIP	CK50V 3300P-K	
C102	SAT	141P131030	C-CERAMIC-CHIP	CK50V 2200P-K	
C103	SAT	141P131050	C-CERAMIC-CHIP	CK50V 3300P-K	
C105	SAT	141P131030	C-CERAMIC-CHIP	CK50V 2200P-K	
C106	SAT	154P331090	C-CERAMIC-CHIP	CK50V 22P-J	
C107	SAT	141P133080	C-CERAMIC-CHIP	CK50V 0.01M-K	
C108	SAT	141P133080	C-CERAMIC-CHIP	CK50V 0.01M-K	
C109	SAT	141P139030	C-CERAMIC-CHIP	B25V 0.1M-K	
C110	SAT	141P133080	C-CERAMIC-CHIP	CK50V 0.01M-K	
C111	SAT	154P333010	C-CERAMIC-CHIP	CK50V 68P-J	
C112	SAT	154P332050	C-CERAMIC-CHIP	CK50C 39P-J	
C113	SAT	154P333010	C-CERAMIC-CHIP	CK50V 68P-J	
C114	SAT	154P331090	C-CERAMIC-CHIP	CK50V 22P-J	
C115	SAT	141P133080	C-CERAMIC-CHIP	CK50V 0.01M-K	
C116	SAT	141P139030	C-CERAMIC-CHIP	B25V 0.1M-K	
C118	SAT	141P139030	C-CERAMIC-CHIP	B25V 0.1M-K	
C119	SAT	141P135080	C-CERAMIC-CHIP	25V 0.1M-Z	
C121	SAT	141P137040	C-CERAMIC-CHIP	B50V 0.022M-Z	
C122	SAT	154P335010	C-CERAMIC-CHIP	CK50V 470P-J	
C123	SAT	141P137080	C-CERAMIC-CHIP	B50V 0.047M-K	
C124	SAT	141P130010	C-CERAMIC-CHIP	CK50V 220P-J	

SYMBOL	PCB	PART No	PART NAME	DESCRIPTION	MODELS
C125	SAT	154P335010	C-CERAMIC-CHIP	CK50V 470P-J	
C126	SAT	141P132010	C-CERAMIC-CHIP	B50V 0.01M-K	
C127	SAT	154P331090	C-CERAMIC-CHIP	CK50V 22P-J	
C128	SAT	141P139030	C-CERAMIC-CHIP	B25V 0.1M-K	
C129	SAT	154P332070	C-CERAMIC-CHIP	CK50C 47P-J	
C131	SAT	141P135080	C-CERAMIC-CHIP	25V 0.1M-Z	
C132	SAT	141P135000	C-CERAMIC-CHIP	25V 0.22M-Z	
C147	SAT	154P333010	C-CERAMIC-CHIP	CK50C 68P-J	
C152	SAT	141P139030	C-CERAMIC-CHIP	B25V 0.1M-K	
C153	SAT	141P139030	C-CERAMIC-CHIP	B25V 0.1M-K	
C157	SAT	154P333010	C-CERAMIC-CHIP	CK50V 68P-J	
C158	SAT	154P333010	C-CERAMIC-CHIP	CK50V 68P-J	
C159	SAT	154P331030	C-CERAMIC-CHIP	CK50V 12P-J	
C160	SAT	154P333050	C-CERAMIC-CHIP	CK50V 100P-J	
C161	SAT	154P332070	C-CERAMIC-CHIP	CK50C 47P-J	
C163	SAT	154P332090	C-CERAMIC-CHIP	CK50V 56P-J	
C166	SAT	154P331010	C-CERAMIC-CHIP	CH50V 10P-C	
C167	SAT	154P333070	C-CERAMIC-CHIP	CK50V 120P-J	
C169	SAT	154P332070	C-CERAMIC-CHIP	CK50C 47P-J	
C170	SAT	141P133080	C-CERAMIC-CHIP	CK50V 0.01M-K	
C171	SAT	141P132030	C-CERAMIC-CHIP	B50V 0.015M-K	
C172	SAT	141P139030	C-CERAMIC-CHIP	B25V 0.1M-K	
C174	SAT	154P331090	C-CERAMIC-CHIP	CK50V 22P-J	
C175	SAT	154P331090	C-CERAMIC-CHIP	CK50V 22P-J	
C176	SAT	141P130010	C-CERAMIC-CHIP	CK50V 220P-J	
C177	SAT	141P131030	C-CERAMIC-CHIP	CK50V 2200P-K	
C179	SAT	154P334030	C-CERAMIC-CHIP	CK50V 220P-J	
C181	SAT	141P132010	C-CERAMIC-CHIP	B50V 0.01M-K	
C182	SAT	141P133080	C-CERAMIC-CHIP	CK50V 0.01M-K	
C193	SAT	141P133080	C-CERAMIC-CHIP	CK50V 0.01M-K	
C194	SAT	141P133080	C-CERAMIC-CHIP	CK50V 0.01M-K	
C195	SAT	141P130010	C-CERAMIC-CHIP	CK50V 220P-J	
C196	SAT	141P130030	C-CERAMIC-CHIP	CK50V 330P-K	
C197	SAT	154P331030	C-CERAMIC-CHIP	CK50V 12P-J	
C198	SAT	154P331030	C-CERAMIC-CHIP	CK50V 12P-J	
C199	SAT	141P131030	C-CERAMIC-CHIP	CK50V 2200P-K	
C241	SAT	141P139030	C-CERAMIC-CHIP	B25V 0.1M-K	
C242	SAT	141P139030	C-CERAMIC-CHIP	B25V 0.1M-K	
C244	SAT	141P139030	C-CERAMIC-CHIP	B25V 0.1M-K	
MISCELLANEOUS					
SK100	SAT	451C129020	JACK-MICROPHONE	YKB21-5129	
TU100	SAT	295P432010	TUNER-SAT	25BSFK77G21	
XT100	SAT	MELX017010	CRYSTAL	4MHz	
XT101	SAT	285P139040	QUARTZ-CRYSTAL	12MHz	

5 SCHEMATIC DIAGRAMS

5.1 SERVICING PRECAUTIONS

The ⚠ symbol indicates components with characteristics critical to safety and performance.

These parts **must** only be replaced with parts having identical values and characteristics – refer to the Service Parts List for the correct Mitsubishi part numbers.

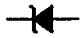
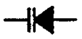
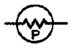
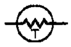
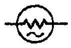
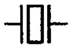
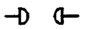
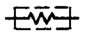
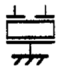
Do not compromise the safety of the receiver by improper servicing.

5.2 GENERAL NOTES

- DC voltages are measured from the points indicated to circuit ground.
- Waveforms are for a PAL colour bar signal.
- Test Points are shown as: "TP6A", etc.
- This is a basic circuit diagram – receivers are subject to modification due to continuous engineering improvement.

5.3 COMPONENT INFORMATION

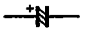
SPECIFIC SYMBOLS

	Zener diode
	Varicap
	Posistor
	Thermistor
	Fusible resistor
	Crystal
	Air gap
	Part (e.g. resistor) on copper side of PCB
	Ceramic filter

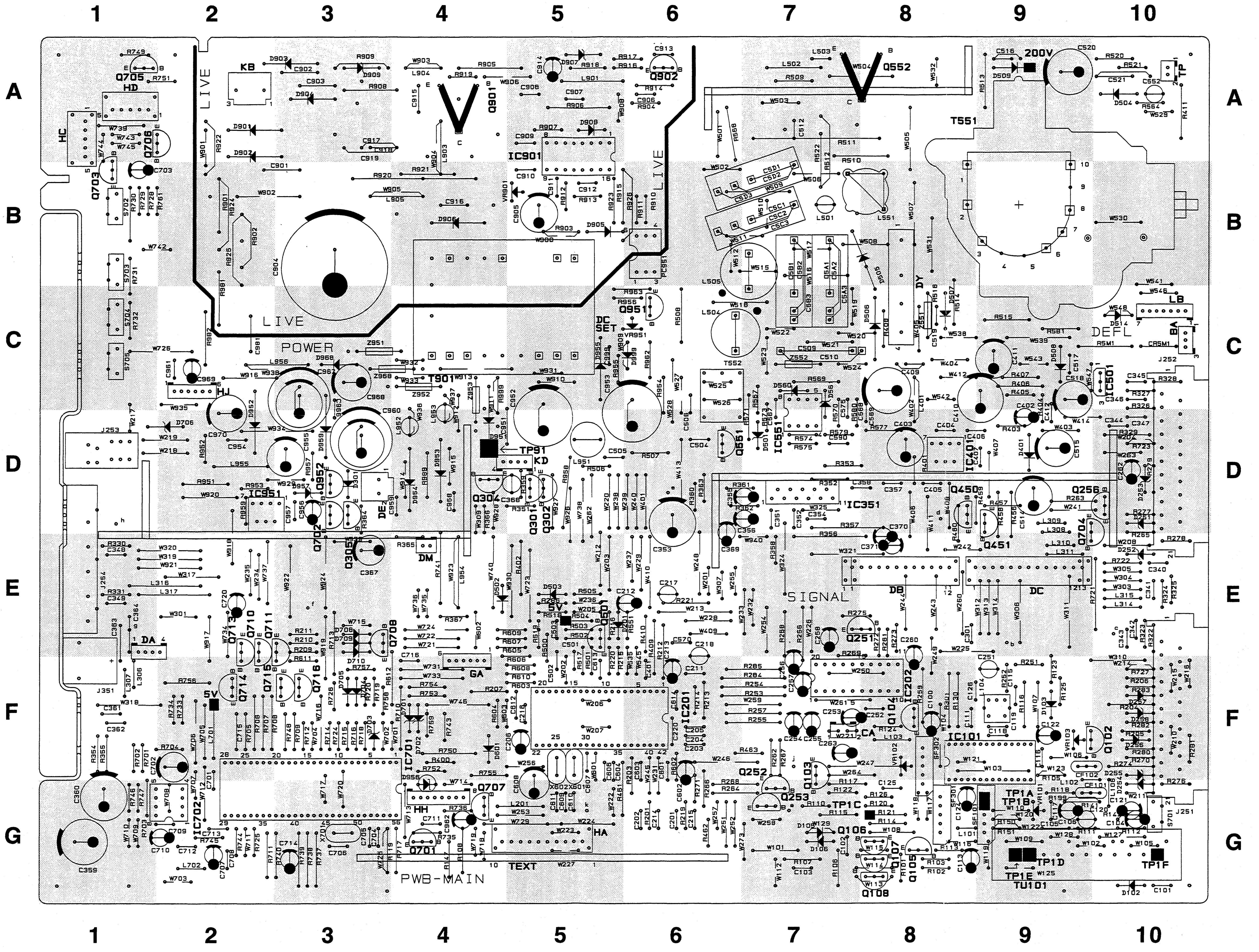
RESISTORS

Value	without spec.	Ω, K = KΩ, M = MΩ
Wattage	without spec.	1/4W or 1/6W (chips: 1/10W)
Tolerance	without spec.	±5%
	D = ±0.5%, F = ±1%, J = ±5%, K = ±10%,	
Type	without spec.	Carbon film
	(S)	Composition
	(MB)	Metal oxide film
	(CE)	Cemented
	(W)	Wire wound
	(M)	Metal film
	(MPC)	Metal plate cement
	(ML)	Metal linear

CAPACITORS

Value	without spec.	pF for values >1, μF for values <1
Voltage	without spec.	50V
Tolerance	without spec.	electrolytic: ±20%, others ±10%
	G = ±2%, J = ±5%, K = ±10%, M = ±20%, P = +100 –0%, Z = +80 –20%, Q = +30 –10%, T = +200 –0%, C = ±0.25pF, D = ±0.5, F = ± 1pF, G = ±2pF	
Type	without spec.	Ceramic
	(MF)	Polyester
	(PP)	Polypropylene film
	(ALM)	Aluminus electrolytic
	(TF)	Twin film
	(SC)	Semiconductor ceramic
	(MP)	Metalised paper
	(MPP)	Metalised plastic film
	(MMF)	Metalised polyester
	(MF.PP)	Polyester/polypropylene film
	(PS)	Polystyrene (styrol)
	(TAN) or (TANT)	Tantalum
		Electrolytic
	(BP) or (NP)	Non-polarised electrolytic
Characteristic	(only ceramic capacitors)	
	without spec.	B or F (high dielectric)
	CH, SL, etc.	Temperature compensating types

PCB-MAIN (AV1 series)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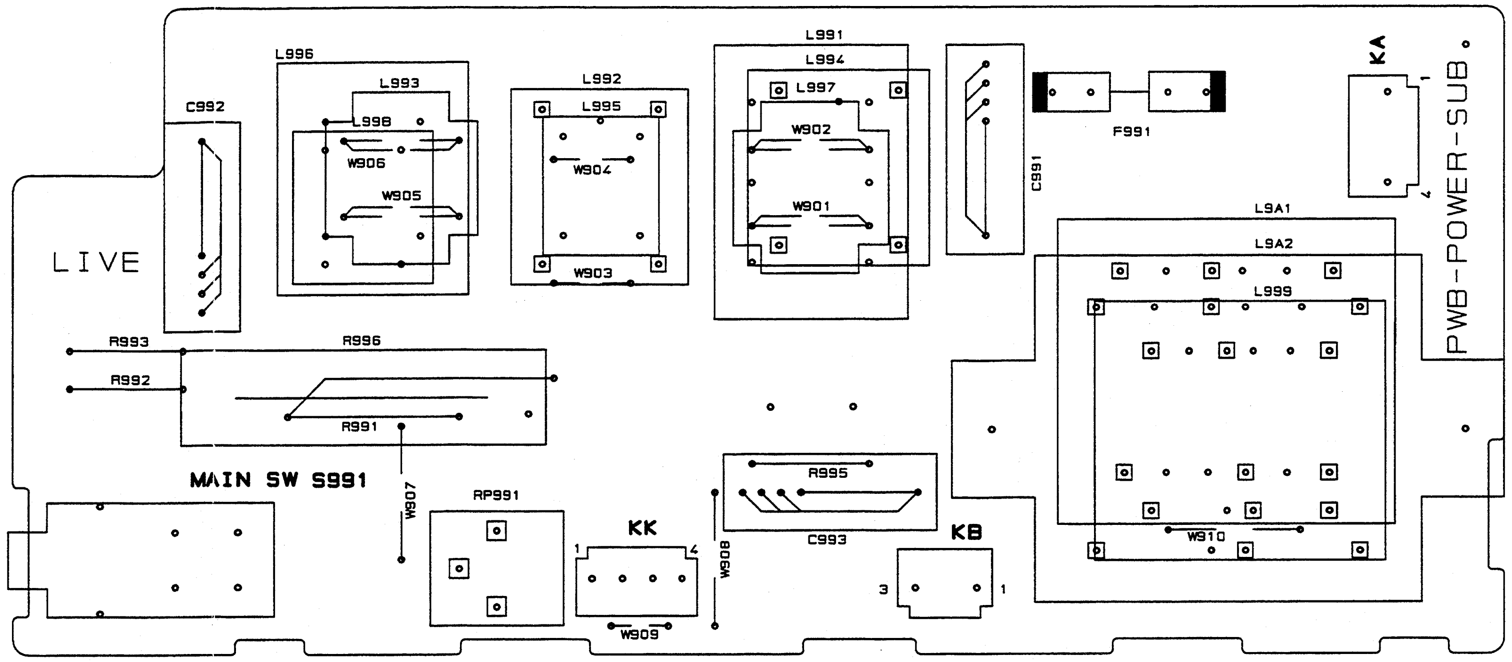
A
B
C
D
E
F
G
LIVE
LIVE
LIVE
POWER
SIGNAL
DEFL
PWB-MAIN
TEXT
200V
KB
HD
HC
HJ
DA
DB
DC
DE
DM
DY
GA
HA
HH
KD
LB
BA
CA
TP
DC SET
5V
5V
TP91
T551
T552
T901
IC901
IC951
IC551
IC401
IC351
IC701
IC702
IC201
IC101
Q552
Q901
Q902
Q951
Q952
Q705
Q706
Q703
Q551
Q450
Q451
Q256
Q704
Q304
Q301
Q302
Q305
Q702
Q713
Q710
Q711
Q708
Q714
Q715
Q716
Q501
Q251
Q252
Q253
Q103
Q104
Q102
Q106
Q107
Q105
Q108
Q701
Q707
TP1A
TP1B
TP1C
TP1D
TP1E
TP1F
TU101
J253
J254
J351
J252
J251

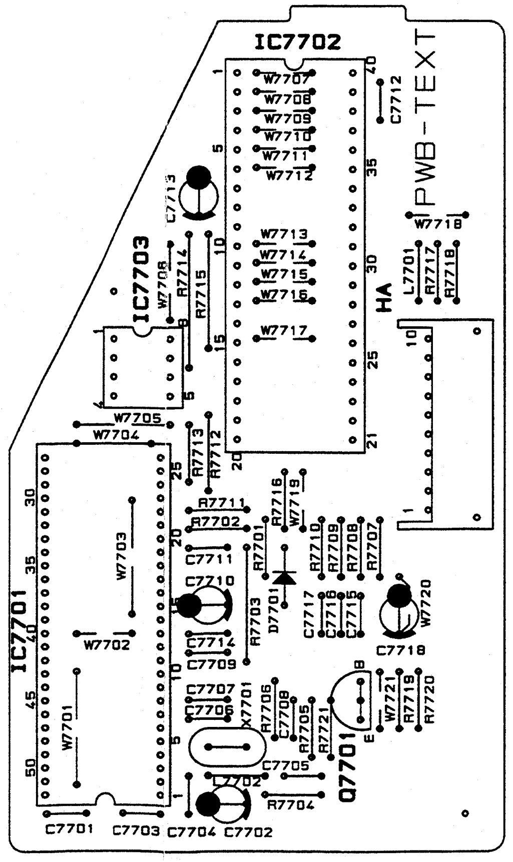
MAIN PCB COMPONENT ADDRESSES

C509	C7	D708	E3	L316	E2	Q713	E2
C5A1	B7	D709	E3	L317	E2	Q714	F2
C5A2	B7	D710	E3	L401	C8	Q715	F3
C5A3	C7	D901	A2	L501	B7	Q716	F3
C5B1	B7	D902	A2	L502	A7	Q901	A4
C5B2	B7	D903	A3	L503	A7	Q902	A6
C5B3	C7	D904	A3	L504	C6	Q951	C6
C5C1	B7	D905	B5	L505	B6	Q952	D3
C5C2	B7	D906	B4	L551	B8	R352	D7
C5C3	B7	D907	A5	L701	F2	R353	D7
C5D1	B7	D908	A5	L702	G2	R406	C9
C5D2	B7	D909	A3	L901	A5	R508	C6
C5D3	B6	D951	D4	L903	A4	R511	A7
C904	B3	D952	D2	L904	A4	R512	A7
C981	C2	D953	D4	L905	B4	R513	A9
CF101	G9	D954	D4	L951	D5	R514	C8
CF102	F9	D955	C5	L952	D4	R516	C8
CR5M1	C10	D956	G4	L953	D4	R573	D7
D102	G10	D957	D3	L954	E4	R574	D7
D103	F9	D959	D3	L955	D2	R575	D7
D105	G7	D968	C3	L956	C3	R5M1	C10
D106	G7	D999	C6	PC951	B6	R921	B4
D201	E6	IC101	F9	Q102	F10	R954	C6
D251	D10	IC201	F6	Q103	F7	R955	C5
D252	E10	IC202	F8	Q104	F8	R981	C2
D253	D10	IC351	D7	Q105	G8	R982	C2
D254	G10	IC401	D8	Q106	G8	S701	G10
D255	F10	IC501	C10	Q107	G8	S702	B1
D256	F10	IC551	D7	Q108	G7	S703	B1
D257	F10	IC701	F4	Q251	E8	S704	C1
D258	F10	IC702	G2	Q252	G7	S705	C1
D301	D3	IC901	A5	Q253	G7	SF101	G9
D401	D9	IC951	D2	Q256	D10	SF301	G8
D501	D7	J251	G10	Q301	D5	SF302	F8
D502	E4	J252	C10	Q302	D5	T551	A8
D503	E5	J253	D1	Q304	D4	T552	C6
D504	A10	J254	E1	Q305	D3	T901	C4
D505	B9	J351	F1	Q450	D8	TU101	G9
D506	C8	L101	G8	Q451	D9	VR101	G9
D507	C8	L102	G9	Q501	E5	VR102	F8
D508	C9	L103	F8	Q551	D6	VR103	F9
D509	A9	L104	F9	Q552	A8	VR901	B5
D514	C10	L106	G10	Q701	G4	VR951	C6
D560	C7	L201	G5	Q702	D3	X601	F5
D561	C7	L306	F1	Q703	B1	X602	F5
D601	F4	L307	F1	Q704	D10	X701	G3
D701	F4	L308	D9	Q705	A1	Z551	C8
D702	F4	L309	D9	Q706	A1	Z552	C7
D703	F3	L310	E9	Q707	G4	Z951	C3
D704	F3	L311	E9	Q708	E3	Z952	C4
D705	F3	L314	E10	Q710	E2	Z953	C4
D706	D2	L315	E10	Q711	E2	Z968	C3


LIVE
C992
L996
L993
L998
W906
W905
L992
L995
W904
W903
L991
L994
L997
W902
W901
C991
F991
KA
PWB-POWER-SUB
L9A1
L9A2
L999
R993
R996
R992
R991
MAIN SW S991
W907
RP991
KK
R995
C993
W908
W909
KB
W910

PCB POWER SUB

- C991
- C993
- F991
- L991
- L992
- L993
- L994
- L995
- L996
- L997
- L998
- R991
- R992
- R993
- RP991
- S991

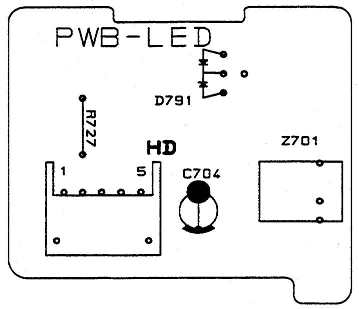

IC7702
PWB-TEXT
IC7703
IC7701
HA
Q7701
C7713
C7712
W7718
L7701
X7701
D7701
C7701
C7703
C7704
C7702
R7704
C7705

PCB TEXT

- IC7701
- IC7702
- Q7701
- D7701
- L7701
- L7702
- X7701

PCB LED

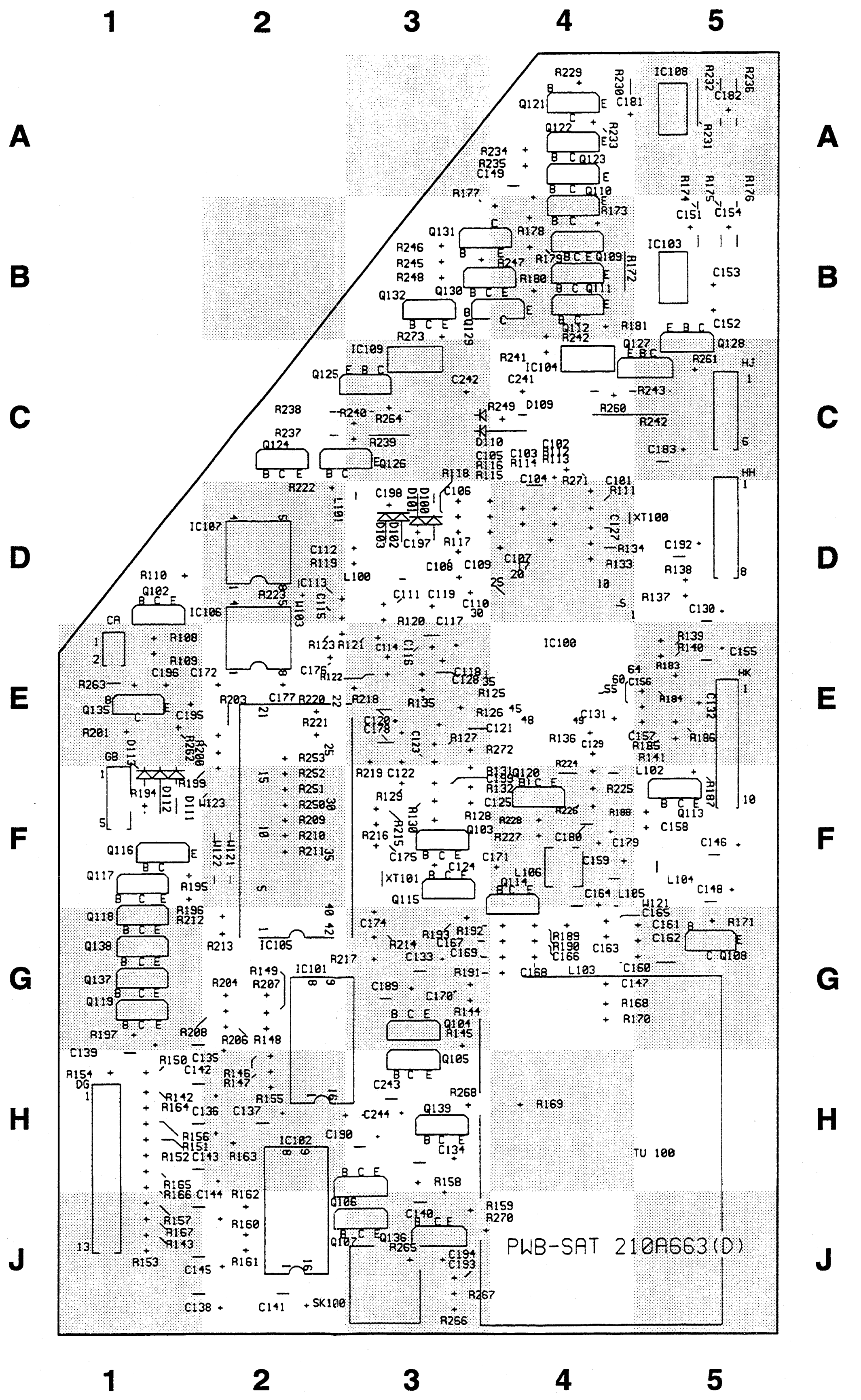
- D791
- Z701


PWB-LED
D791
R727
HD
C704
Z701

PCB-SAT COMPONENT ADDRESSES

C101	D4
C102	C4
C103	C4
C104	D4
C105	C3
C106	D3
C107	D4
C108	D3
C109	D3
C110	D3
C111	D3
C112	D2
C113	D2
C114	E3
C115	D2
C116	E3
C117	D3
C118	E3
C119	D3
C120	E3
C121	E3
C122	F3
C123	E3
C124	F3
C125	F4
C126	E3
C127	D4
C128	E3
C129	E4
C130	D5
C131	E4
C132	E5
C133	G3
C134	H3
C135	H2
C136	H1
C137	H2
C138	J2
C139	H1
C140	J3
C141	J2
C142	H1
C143	H1
C144	J2
C145	J2
C146	F5
C147	G4
C148	F5
C149	A4
C151	B5
C152	B5
C153	B5
C154	B5
C155	E5
C156	E5
C157	E5
C158	F5
C159	F4
C160	G5
C161	G5
C162	G5
C163	G4
C164	F4
C165	G5
C166	G4
C167	G3
C168	G4
C169	G3
C170	G3
C171	F4
C172	E2
C174	G3
C175	F3
C176	E2
C177	E2
C178	E3
C179	F4
C180	F4
C181	A4
C182	A5
C183	C5
C189	G3
C192	D5
C193	J3
C194	J3
C195	E1
C196	E1
C197	D3
C198	D3
C199	F4
C241	C4
C242	C3
C243	H3
C244	H3
D100	D3
D101	D3
D102	D3
D103	D3
D109	C4
D110	C4
D111	F1
D112	F1
D113	E1
IC100	E4
IC101	G1
IC102	H2
IC103	B5
IC104	C4
IC105	F2
IC106	E2
IC107	D2
IC108	A5
IC109	C3
L100	D3
L101	D2
L102	F5
L103	G4
L104	F5
L105	F4
L106	F4
Q102	D1
Q103	F3
Q104	G3
Q105	H3
Q106	J3
Q107	J3
Q108	G5
Q109	B4
Q110	B4
Q111	B4
Q112	B4
Q113	F5
Q114	F4
Q115	F3
Q116	F1
Q117	F1
Q118	G1
Q119	G1
Q120	F4
Q121	A4
Q122	A4
Q123	A4
Q124	C2
Q125	C3
Q126	C3
Q127	C5
Q128	C5
Q129	B3
Q130	B3
Q131	B3
Q132	B3
Q135	E1
Q136	J3
Q137	G1
Q138	G1
Q139	H3
R108	E1
R109	E1
R110	D1
R111	D4
R112	C4
R113	C4
R114	C4
R115	C3
R116	C3
R117	D3
R118	C3
R119	D2
R120	D3
R121	E3
R122	E2
R123	E2
R125	E3
R126	E3
R127	E3
R128	F3
R129	F3
R130	F3
R131	F4
R132	F4
R133	D4
R134	D4
R135	E3
R136	E4
R137	D5
R138	D5
R139	E5
R140	E5
R141	E5
R142	H1
R143	J1
R144	G3
R145	G3
R146	H2
R147	H2
R148	G1
R149	G1
R150	H1
R151	H1
R152	H1
R153	J1
R154	H1
R155	H2
R156	H1
R157	J1
R158	H3
R159	J4
R160	J2
R161	J2
R162	J2
R163	H2
R164	H1
R165	H1
R166	J1
R167	J1
R168	G4
R169	H4
R170	G4
R171	G5
R172	B4
R173	B4
R174	A5
R175	A5
R176	A5
R177	A3
R178	B4
R179	B4
R180	B4
R181	B4
R183	E5
R184	E5
R185	E5
R186	E5
R187	F5
R189	G4
R190	G4
R191	G3
R192	G3
R193	G3
R194	F1
R195	F1
R196	G1
R197	G1
R199	F1
R200	E2
R201	E1
R203	E2
R204	G1
R206	G1
R207	G1
R208	G1
R209	F2
R210	F2
R211	F2
R212	G1
R213	G2
R214	G3
R215	F3
R216	F3
R217	G3
R218	E3
R219	F3
R220	E2
R221	E2
R222	D2
R223	D2
R224	F4
R225	F4
R226	F4
R227	F4
R228	F4
R229	A4
R230	A4
R231	A5
R232	A5
R233	A4
R234	A4
R235	A4
R236	A5
R237	C2
R238	C2
R239	C3
R240	C3
R241	C4
R242	C5
R243	C5
R244	B4
R245	B3
R246	B3
R247	B4
R248	B3
R249	C4
R250	F2
R251	F2
R252	F2
R253	E2
R260	C4
R261	C5
R262	E1
R263	E1
R264	C3
R265	J3
R266	J3
R267	J3
R268	H3
R270	J4
R271	D4
R272	E4
R273	B3
SK100	J3
TU100	H4
XT100	D5
XT101	F3

PCB-SAT

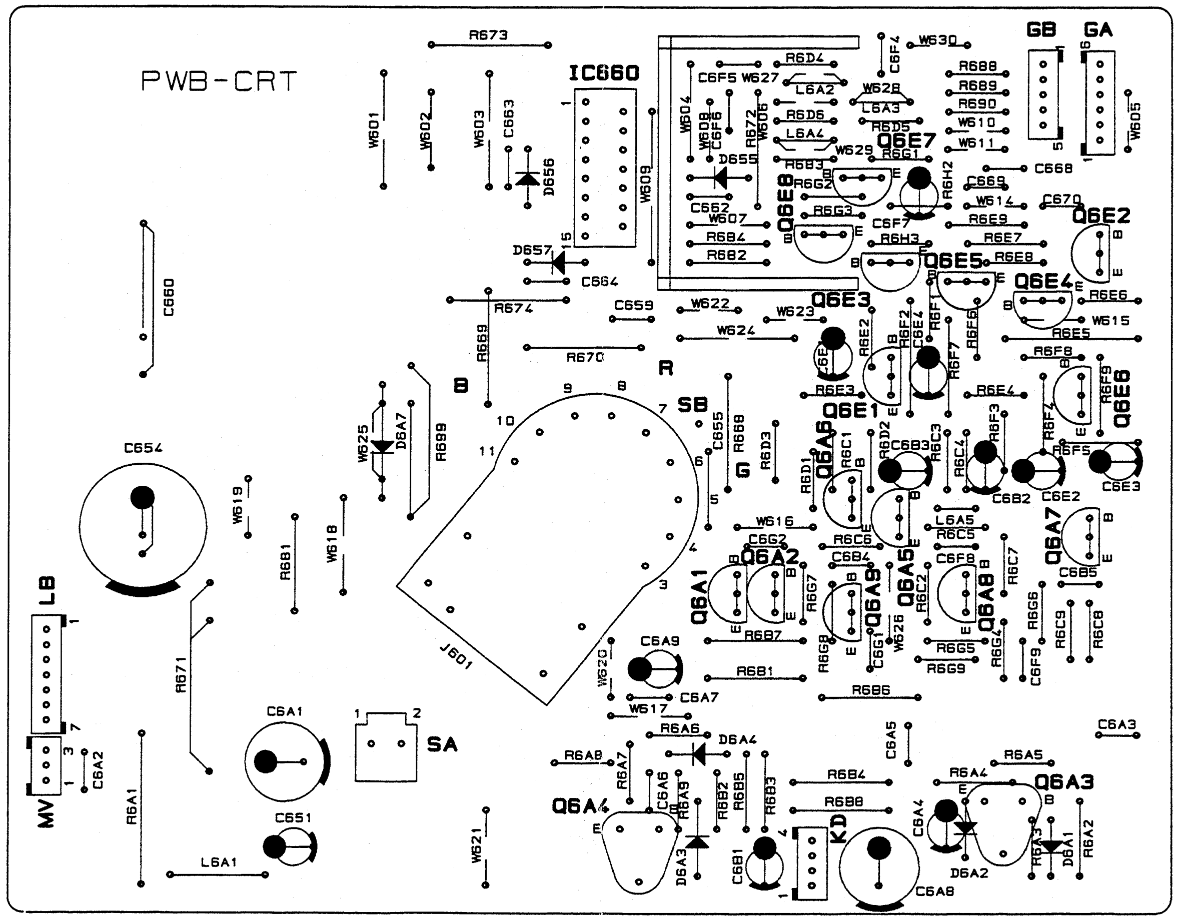


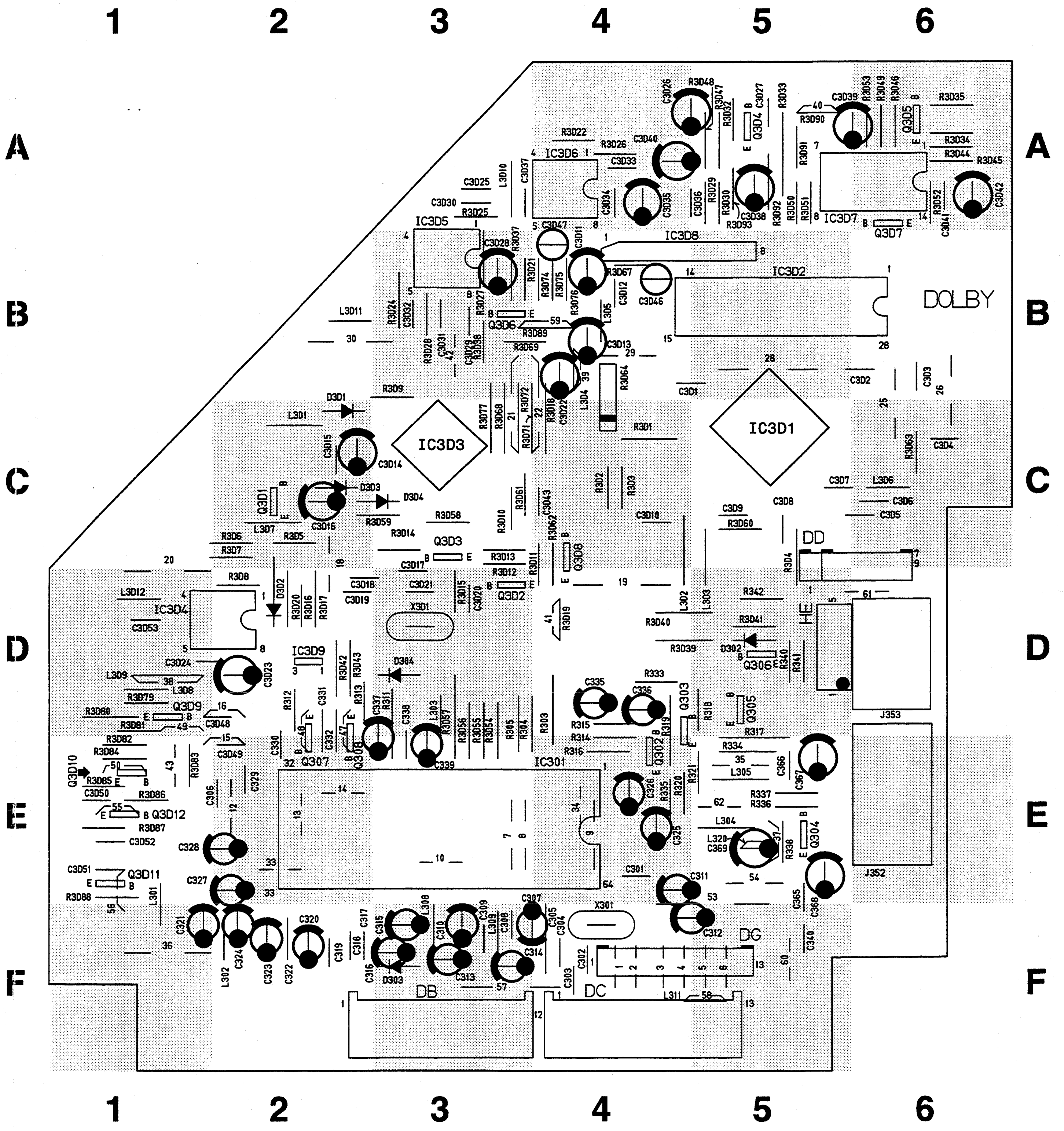
PCB DOLBY ADDRESSES

D302	D5	L303	D5	Q304	E5
D303	F3	L304	E5	Q305	D5
D304	D3	L305	E5	Q306	D5
D3D1	C2	L308	F3	Q307	E2
D3D2	D2	L309	F3	Q308	E2
D3D3	C2	L311	F4	Q3D1	C2
D3D4	C3	L320	E5	Q3D10	E1
IC301	E4	L3D1	C2	Q3D11	E1
IC3D1	C5	L3D10	A3	Q3D12	E1
IC3D2	B5	L3D11	B2	Q3D2	D3
IC3D3	C3	L3D12	D1	Q3D3	C3
IC3D4	D1	L3D2	D4	Q3D4	A5
IC3D5	B3	L3D4	B4	Q3D5	A6
IC3D6	A4	L3D5	B4	Q3D6	B3
IC3D7	A5	L3D6	C6	Q3D7	A6
IC3D8	B4	L3D7	C2	Q3D8	C4
IC3D9	D2	L3D8	D1	Q3D9	D1
L301	E1	L3D9	D1	X301	F4
L302	F2	Q302	E4	X3D1	D3
L303	D3	Q303	D4		

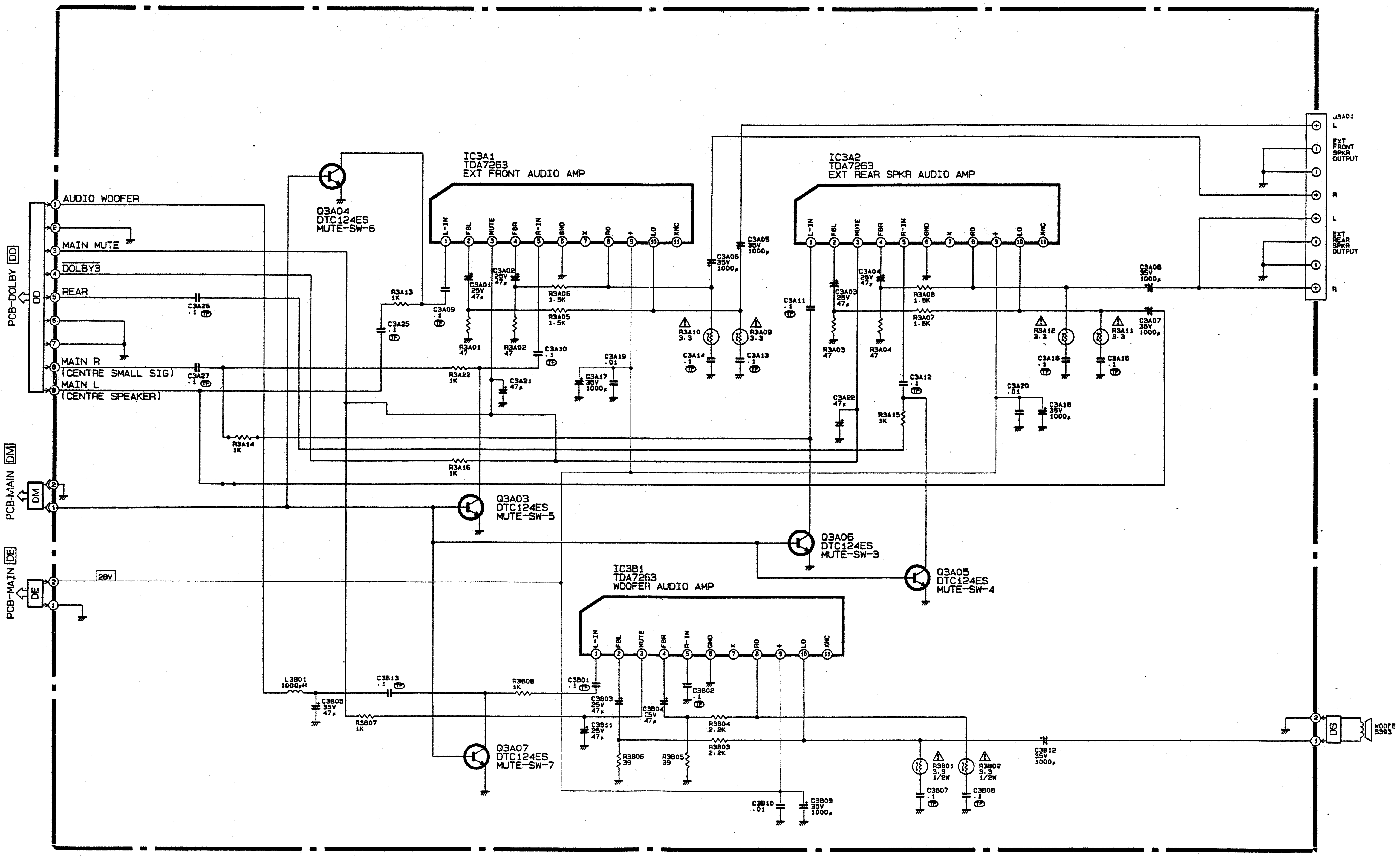
PCB CRT

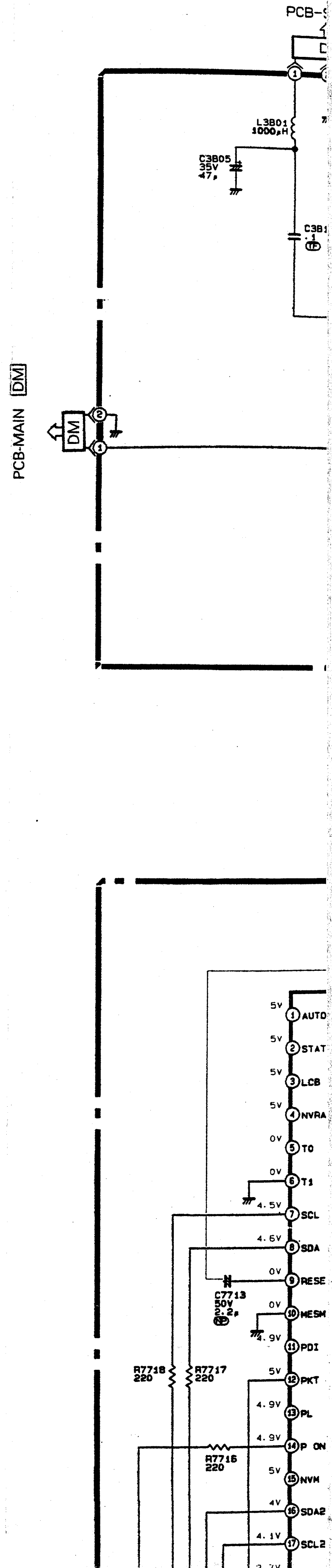
D655
D656
D657
IC660
J601
R671
D6A1
D6A2
D6A3
D6A4
D6A7
L6A1
L6A2
L6A3
L6A4
L6A5
Q6A1
Q6A2
Q6A3
Q6A4
Q6A5
Q6A6
Q6A7
Q6A8
Q6A9
Q6E1
Q6E2
Q6E3
Q6E4
Q6E5
Q6E6
Q6E7
Q6E8
R6B4
R6B6
R6B7
R6B8


PWB-CRT
IC660
J601
GB
GA
LB
MV
SA
SB
KD
C654
C6A1
C651
C6A8
Q6A1
Q6A2
Q6A3
Q6A4
Q6A5
Q6A7
Q6A8
Q6A9
Q6E1
Q6E2
Q6E3
Q6E4
Q6E5
Q6E6
Q6E7
Q6E8
R
G
B

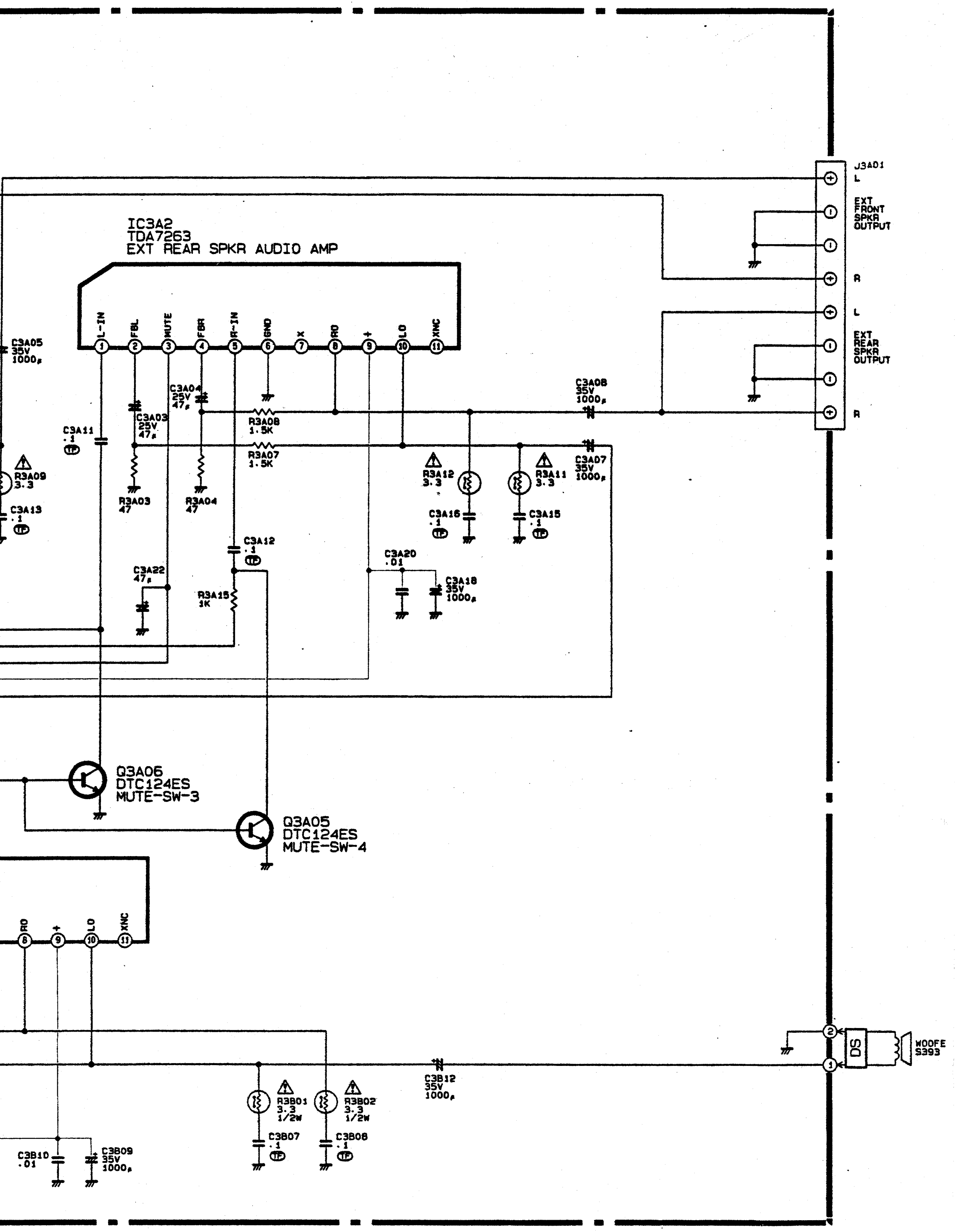

1
2
3
4
5
6
A
B
C
D
E
F
DOLBY
IC3D1
IC3D2
IC3D3
IC3D4
IC3D5
IC3D6
IC3D7
IC3D8
IC3D9
IC301
X301
X3D1
J352
J353
DB
DC
DD
DG
HE

⚠ PCB−AUD−PWR (CT-28AV1 GDS/GD-S/SD-S/ED-S)

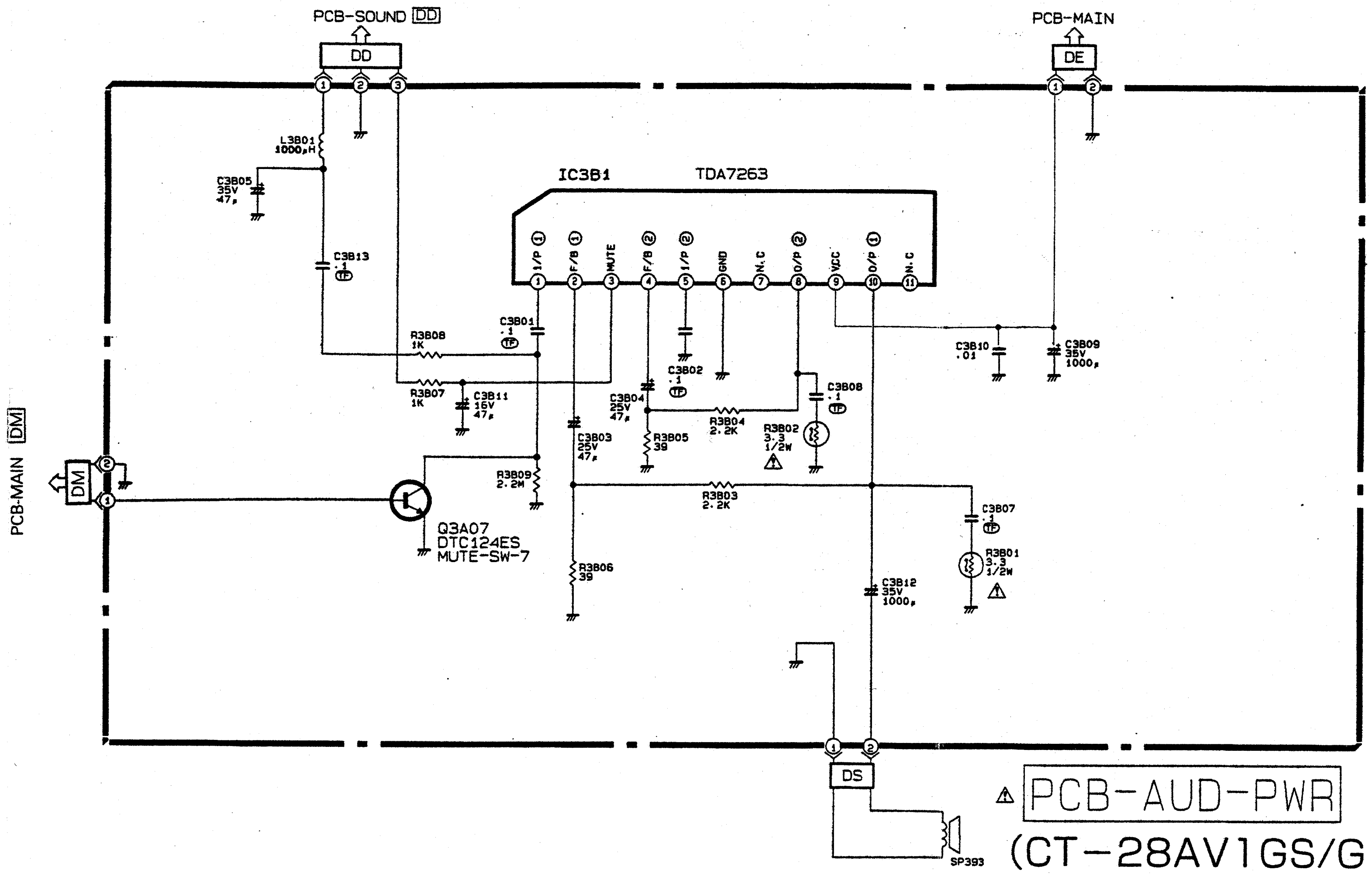

PCB-DOLBY DD
DD
AUDIO WOOFER
MAIN MUTE
DOLBY3
REAR
MAIN R
(CENTRE SMALL SIG)
MAIN L
(CENTRE SPEAKER)
PCB-MAIN DM
DM
PCB-MAIN DE
DE
28V
Q3A04
DTC124ES
MUTE-SW-6
IC3A1
TDA7263
EXT FRONT AUDIO AMP
IC3A2
TDA7263
EXT REAR SPKR AUDIO AMP
L-IN
FBL
MUTE
FBR
R-IN
GND
X
RO
+
LO
XNC
R3A13 1K
C3A25 .1
C3A09 .1
C3A01 25V 47μ
C3A02 25V 47μ
R3A06 1.5K
R3A05 1.5K
R3A01 47
R3A02 47
C3A10 .1
C3A26 .1
C3A27 .1
R3A22 1K
C3A21 47μ
C3A19 .01
C3A17 35V 1000μ
C3A06 35V 1000μ
C3A05 35V 1000μ
R3A10 3.3
R3A09 3.3
C3A14 .1
C3A13 .1
C3A11 .1
C3A03 25V 47μ
C3A04 25V 47μ
R3A08 1.5K
R3A07 1.5K
R3A03 47
R3A04 47
C3A22 47μ
C3A12 .1
R3A15 1K
R3A12 3.3
R3A11 3.3
C3A16 .1
C3A15 .1
C3A20 .01
C3A18 35V 1000μ
C3A08 35V 1000μ
C3A07 35V 1000μ
J3AD1
L
EXT FRONT SPKR OUTPUT
R
L
EXT REAR SPKR OUTPUT
R
R3A14 1K
R3A16 1K
Q3A03
DTC124ES
MUTE-SW-5
Q3A06
DTC124ES
MUTE-SW-3
Q3A05
DTC124ES
MUTE-SW-4
IC3B1
TDA7263
WOOFER AUDIO AMP
L3B01 1000μH
C3B05 35V 47μ
C3B13 .1
R3B08 1K
C3B01 .1
R3B07 1K
C3B03 25V 47μ
C3B11 25V 47μ
C3B04 25V 47μ
C3B02 .1
R3B04 2.2K
R3B03 2.2K
R3B06 39
R3B05 39
Q3A07
DTC124ES
MUTE-SW-7
R3B01 3.3 1/2W
R3B02 3.3 1/2W
C3B07 .1
C3B08 .1
C3B12 35V 1000μ
C3B10 .01
C3B09 35V 1000μ
DS
WOOFE S393


PCB-
L3B01 1000μH
C3B05 35V 47μ
C3B1
PCB-MAIN DM
DM
5V
AUTO
STAT
LCB
NVRA
0V
T0
T1
4.5V
SCL
4.6V
SDA
RESE
C7713 50V 2.2μ
MESM
4.9V
PDI
R7718 220
R7717 220
PKT
PL
P ON
R7716 220
NVM
4V
SDA2
4.1V
SCL2

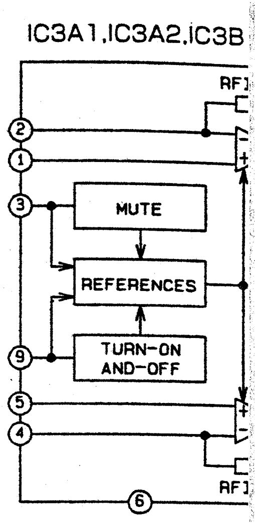
〈IC BLOCK DIAGRAMS OF PCB−MAIN AND CRT〉

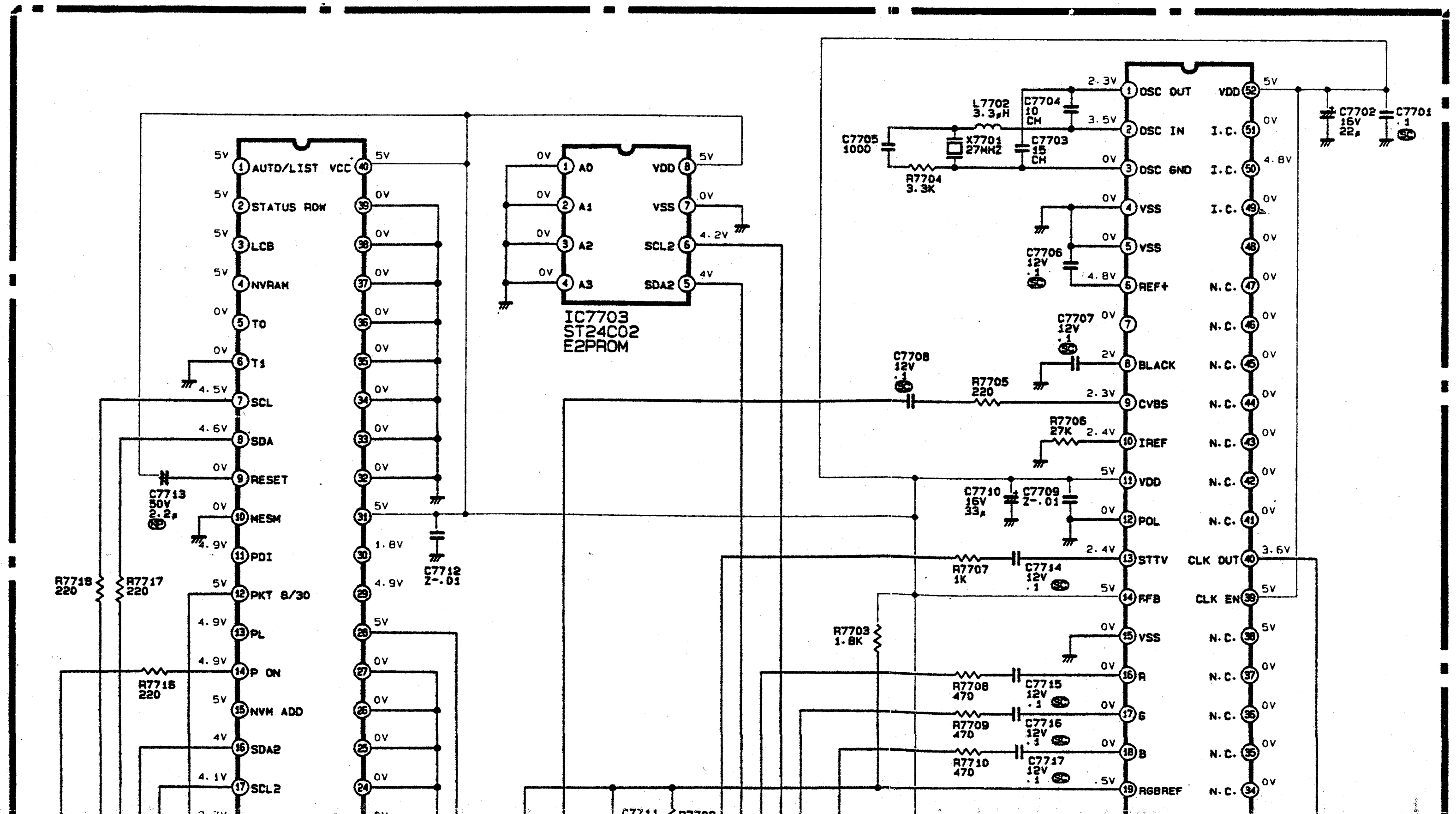

IC3A2
TDA7263
EXT REAR SPKR AUDIO AMP
J3A01
EXT FRONT SPKR OUTPUT
EXT REAR SPKR OUTPUT
Q3A06
DTC124ES
MUTE-SW-3
Q3A05
DTC124ES
MUTE-SW-4
C3A08 35V 1000µ
C3A07 35V 1000µ
C3A05 35V 1000µ
R3A08 1.5K
R3A07 1.5K
R3A03 47
R3A04 47
R3A15 1K
R3A12 3.3
R3A11 3.3
R3A09 3.3
C3A20 .01
C3A18 35V 1000µ
C3B12 35V 1000µ
R3B01 3.3 1/2W
R3B02 3.3 1/2W
C3B10 .01
C3B09 35V 1000µ
DS
WOOFE S393

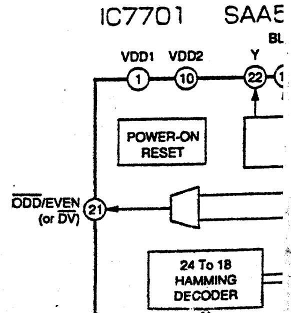
IS OF
RT

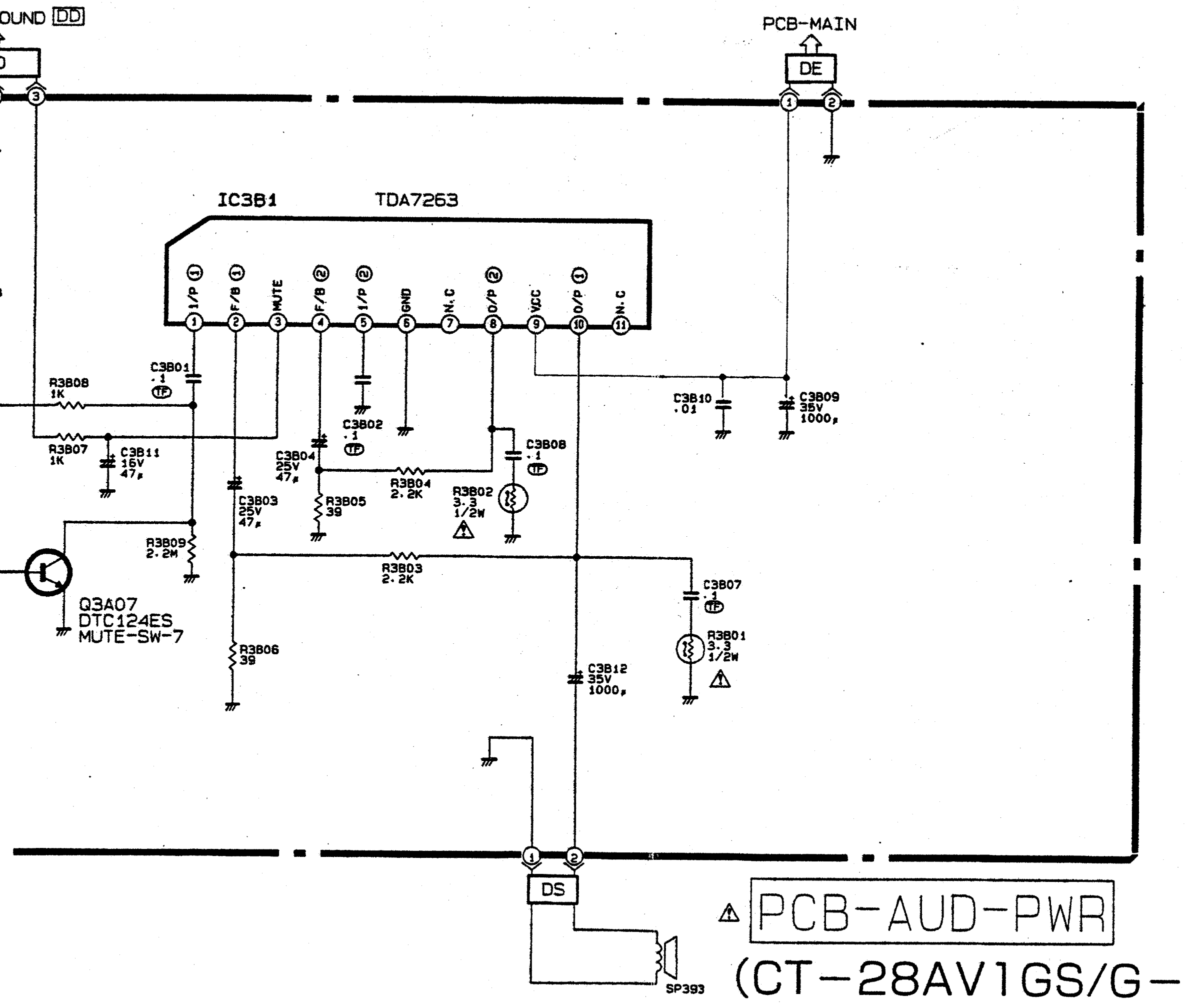

PCB-SOUND DD
DD
PCB-MAIN
DE
PCB-MAIN DM
DM
IC3B1
TDA7263
L3B01 1000µH
C3B05 35V 47µ
C3B13 .1
R3B08 1K
R3B07 1K
C3B11 16V 47µ
C3B01 .1
C3B04 25V 47µ
C3B02 .1
R3B04 2.2K
R3B02 3.3 1/2W
C3B08 .1
C3B03 25V 47µ
R3B05 39
R3B09 2.2M
R3B03 2.2K
R3B06 39
C3B12 35V 1000µ
C3B07 .1
R3B01 3.3 1/2W
C3B10 .01
C3B09 35V 1000µ
Q3A07
DTC124ES
MUTE-SW-7
DS
SP393

⚠ PCB-AUD-PWR
(CT-28AV1GS/G-S/S-S)


IC3A1,IC3A2,IC3B
MUTE
REFERENCES
TURN-ON AND-OFF


AUTO/LIST
STATUS ROW
LCB
NVRAM
T0
T1
SCL
SDA
RESET
MESH
POI
PKT 8/30
PL
P ON
NVM ADD
SDA2
SCL2
VCC
IC7703
ST24C02
E2PROM
A0
A1
A2
A3
VDD
VSS
SCL2
SDA2
OSC OUT
OSC IN
OSC GND
VSS
REF+
BLACK
CVBS
IREF
VDD
POL
STTV
RFB
R
G
B
RGBREF
CLK OUT
CLK EN
N.C.
I.C.
X7701 27MHZ
L7702 3.3µH
C7705 1000
R7704 3.3K
C7713 50V 2.2µ
R7718 220
R7717 220
R7716 220
C7712 Z-.01
R7703 1.8K
R7705 220
R7706 27K
R7707 1K
R7708 470
R7709 470
R7710 470
C7702 16V 22µ
C7701 .1

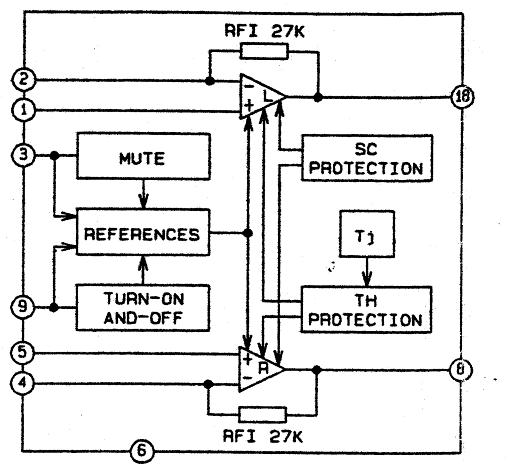

IC7701
SAA5
VDD1
VDD2
POWER-ON RESET
ODD/EVEN (or DV)
24 To 18 HAMMING DECODER

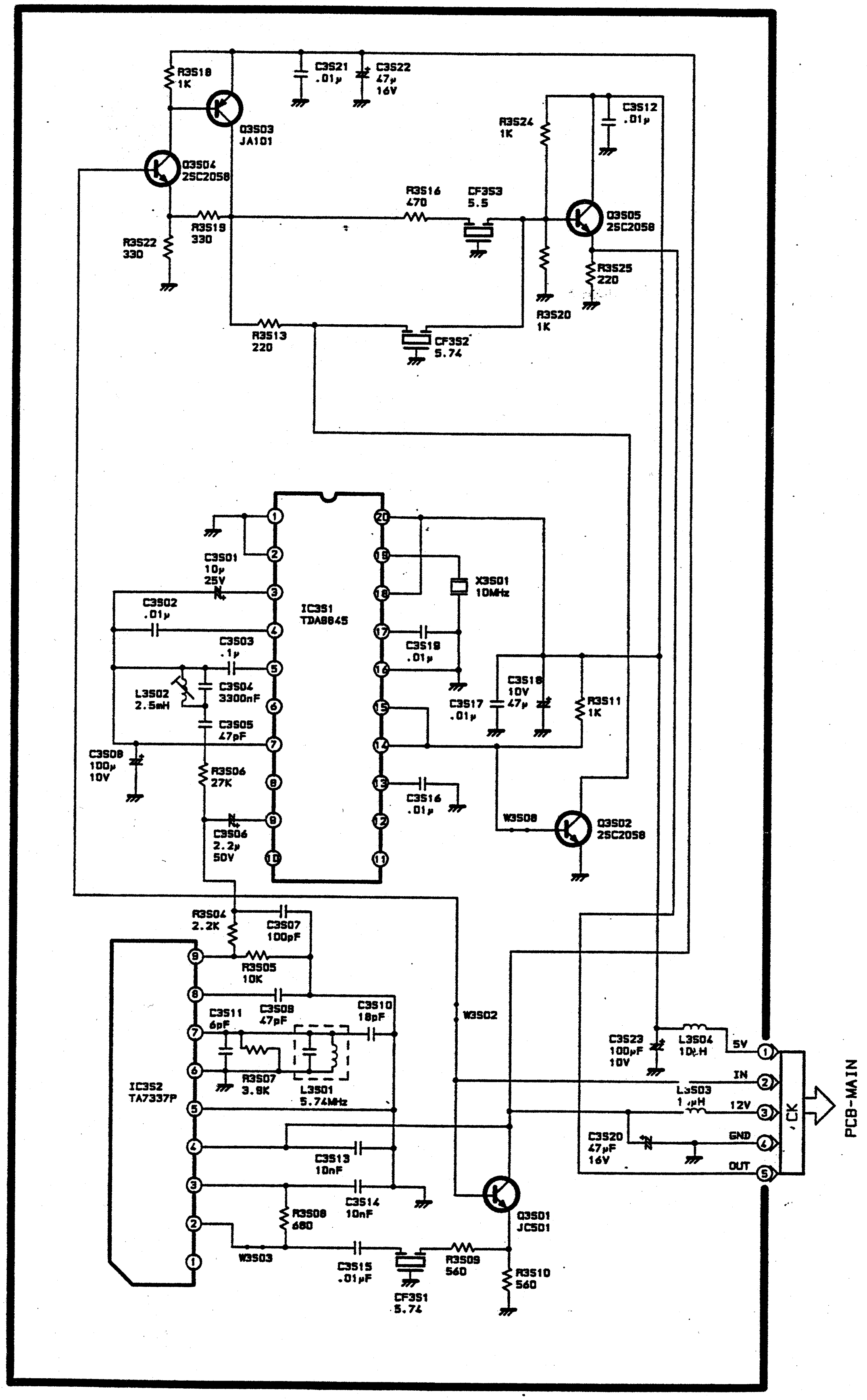

PCB-MAIN
DE
IC3B1
TDA7263
I/P ①
F/B ①
MUTE
F/B ②
I/P ②
GND
N.C
O/P ②
VCC
O/P ①
N.C
R3808 1K
R3807 1K
C3B01 .1
C3B11 16V 47μ
C3B02 .1
C3B04 25V 47μ
C3B03 25V 47μ
R3B05 39
R3B04 2.2K
R3B02 3.3 1/2W
C3B08 .1
C3B10 .01
C3B09 35V 1000μ
R3B09 2.2M
R3B03 2.2K
C3B07 .1
R3B01 3.3 1/2W
R3B06 39
C3B12 35V 1000μ
Q3A07
DTC124ES
MUTE-SW-7
DS
SP393

⚠ PCB-AUD-PWR

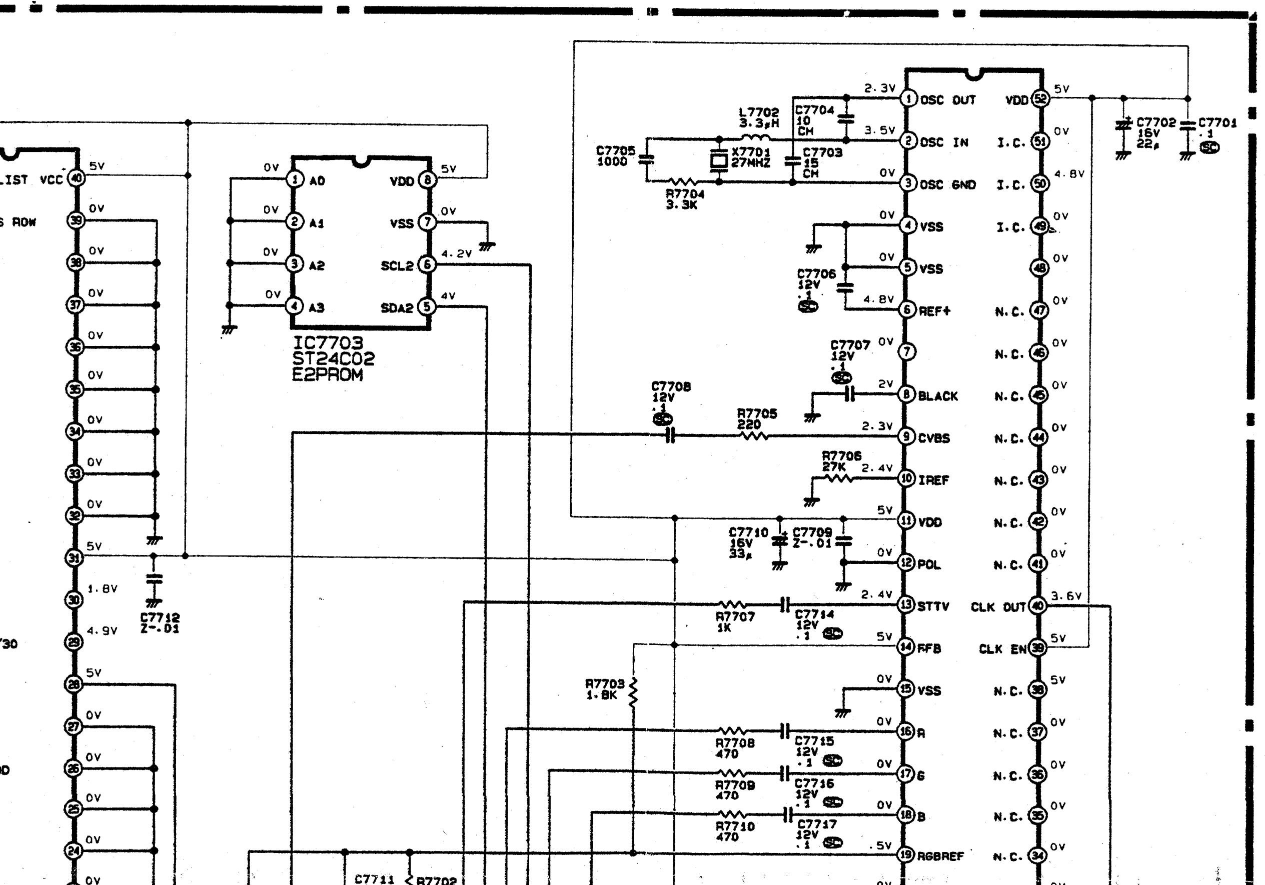
(CT-28AV1GS/G-S/S-S)

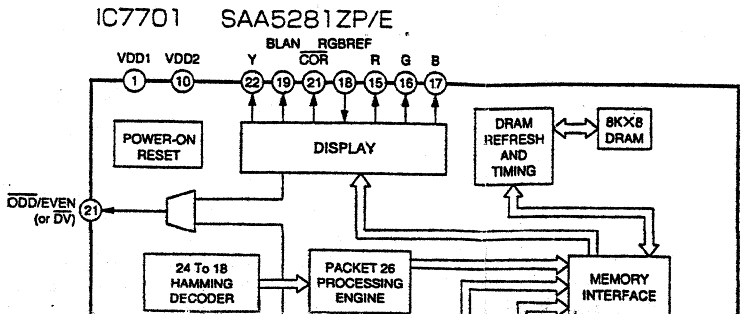
IC3A1,IC3A2,IC3B1 TDA7263

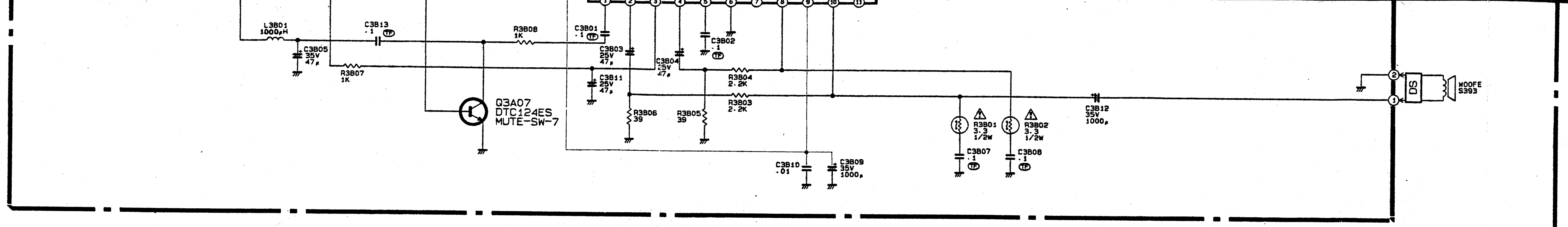

RFI 27K
MUTE
SC PROTECTION
REFERENCES
Tj
TURN-ON AND-OFF
TH PROTECTION
RFI 27K


R3518 1K
C3S21 .01μ
C3S22 47μ 16V
Q3S03 JA101
Q3S04 2SC2058
R3S24 1K
C3S12 .01μ
R3S16 470
CF3S3 5.5
R3S19 330
R3S22 330
Q3S05 2SC2058
R3S25 220
R3S20 1K
R3S13 220
CF3S2 5.74
IC3S1 TDA8845
X3S01 10MHz
C3S01 10μ 25V
C3S02 .01μ
C3S03 .1μ
L3S02 2.5mH
C3S04 3300nF
C3S05 47pF
C3S08 100μ 10V
R3S06 27K
C3S06 2.2μ 50V
C3S19 .01μ
C3S18 10V 47μ
C3S17 .01μ
R3S11 1K
C3S16 .01μ
W3S08
Q3S02 2SC2058
R3S04 2.2K
C3S07 100pF
R3S05 10K
C3S11 6pF
C3S09 47pF
C3S10 18pF
R3S07 3.9K
L3S01 5.74MHz
IC3S2 TA7337P
C3S13 10nF
C3S14 10nF
R3S08 680
W3S03
C3S15 .01μF
CF3S1 5.74
R3S09 560
R3S10 560
Q3S01 JC501
W3S02
C3S23 100μF 10V
L3S04 10μH
L3S03 1μH
C3S20 47μF 16V
5V
IN
12V
GND
OUT
CK
PCB-MAIN

⚠ PCB-IDENT

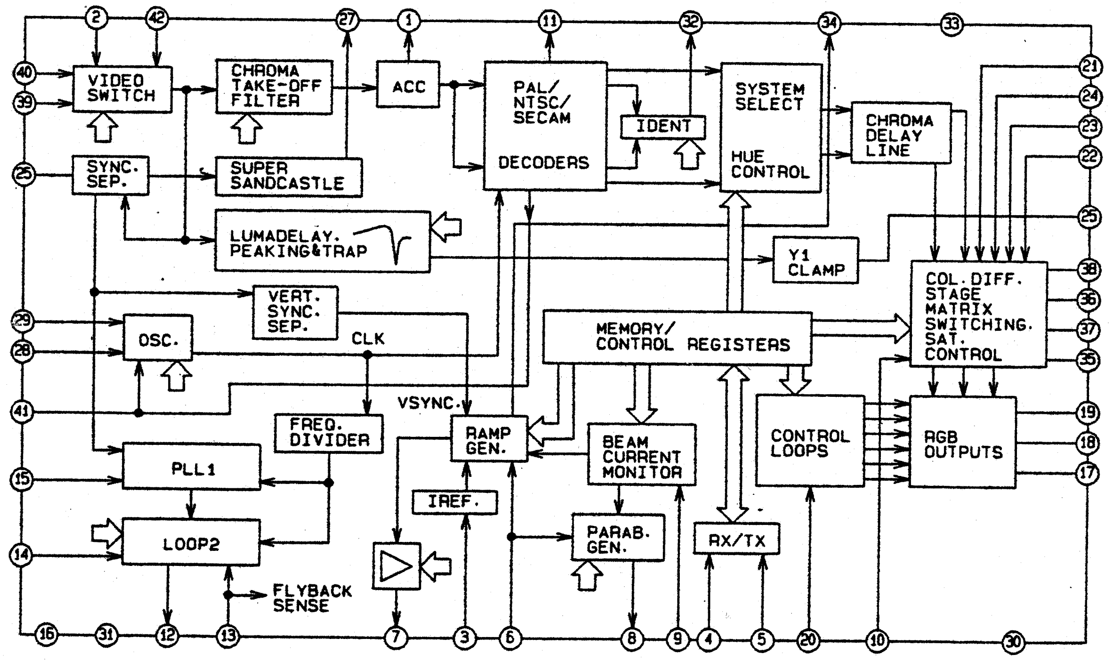

LIST VCC
ROW
IC7703
ST24C02
E2PROM
A0
A1
A2
A3
VDD
VSS
SCL2
SDA2
L7702 3.3μH
C7704 10 CH
C7705 1000
X7701 27MHZ
C7703 15 CH
R7704 3.3K
C7706 12V .1
C7707 12V .1
C7708 12V .1
R7705 220
R7706 27K
C7710 16V 33μ
C7709 Z-.01
R7707 1K
C7714 12V .1
R7703 1.8K
R7708 470
C7715 12V .1
R7709 470
C7716 12V .1
R7710 470
C7717 12V .1
C7712 Z-.01
C7711
R7702
C7702 16V 22μ
C7701 .1
OSC OUT
OSC IN
OSC GND
VSS
REF+
BLACK
CVBS
IREF
VDD
POL
STTV
RFB
R
G
B
RGBREF
I.C.
N.C.
CLK OUT
CLK EN


IC7701 SAA5281ZP/E
VDD1
VDD2
BLAN
RGBREF
Y
COR
R
G
B
POWER-ON RESET
DISPLAY
DRAM REFRESH AND TIMING
8KX8 DRAM
ODD/EVEN (or DV)
24 To 18 HAMMING DECODER
PACKET 26 PROCESSING ENGINE
MEMORY INTERFACE

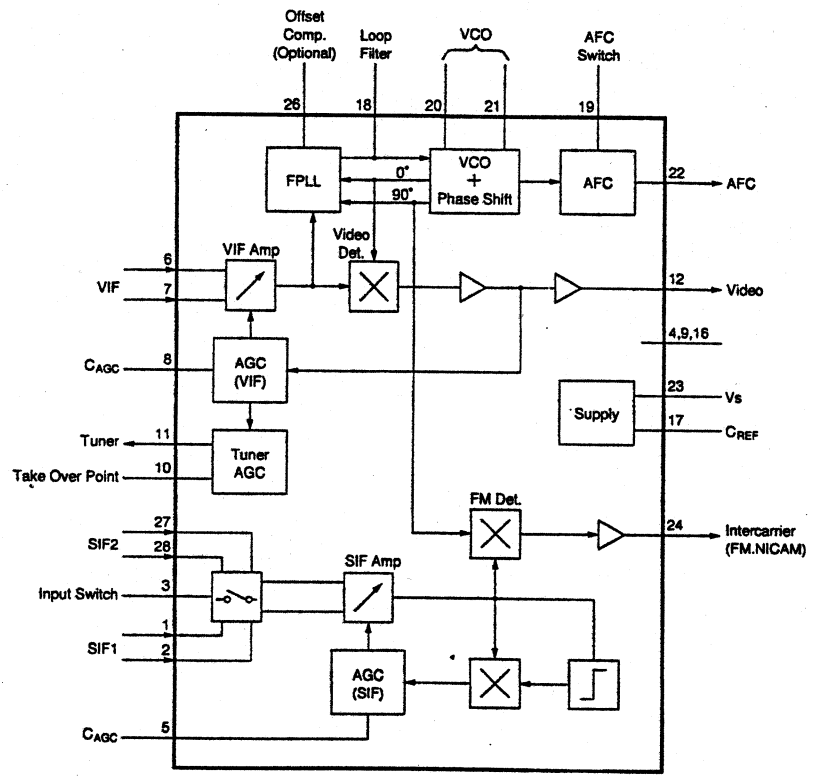

L3B01 1000μH
C3B13 .1
R3B08 1K
C3B01 .1
C3B05 35V 47μ
R3B07 1K
Q3A07 DTC124ES MUTE-SW-7
C3B03 25V 47μ
C3B02 .1
C3B04 25V 47μ
C3B11 25V 47μ
R3B04 2.2K
R3B03 2.2K
R3B06 39
R3B05 39
R3B01 3.3 1/2W
R3B02 3.3 1/2W
C3B12 35V 1000μ
C3B07 .1
C3B08 .1
C3B10 .01
C3B09 35V 1000μ
DS
WOOFE S393

⟨IC BLOCK DIAGRAMS OF PCB−MAIN AND CRT⟩

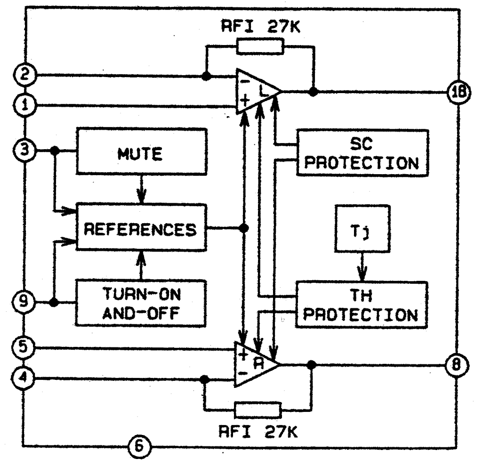
IC201 MC44031


VIDEO SWITCH
CHROMA TAKE-OFF FILTER
ACC
PAL/ NTSC/ SECAM
DECODERS
IDENT
SYSTEM SELECT
HUE CONTROL
CHROMA DELAY LINE
SYNC. SEP.
SUPER SANDCASTLE
LUMADELAY. PEAKING&TRAP
Y1 CLAMP
VERT. SYNC. SEP.
OSC.
CLK
MEMORY/ CONTROL REGISTERS
COL. DIFF. STAGE MATRIX SWITCHING. SAT. CONTROL
FREQ. DIVIDER
VSYNC.
RAMP GEN.
BEAM CURRENT MONITOR
CONTROL LOOPS
RGB OUTPUTS
PLL1
IREF.
LOOP2
PARAB. GEN.
RX/TX
FLYBACK SENSE

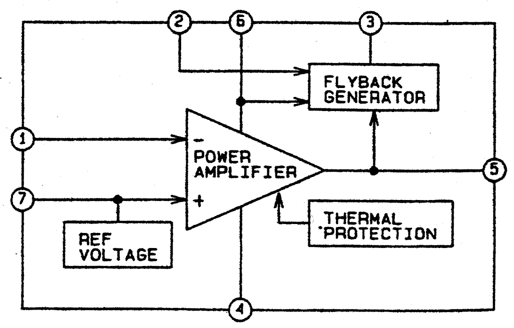
IC101 TDA4472−A


Offset Comp. (Optional)
Loop Filter
VCO
AFC Switch
FPLL
VCO + Phase Shift
AFC
0°
90°
AFC
VIF Amp
Video Det.
VIF
Video
CAGC
AGC (VIF)
4,9,16
Supply
Vs
CREF
Tuner
Take Over Point
Tuner AGC
FM Det.
Intercarrier (FM.NICAM)
SIF2
SIF Amp
Input Switch
SIF1
AGC (SIF)
CAGC

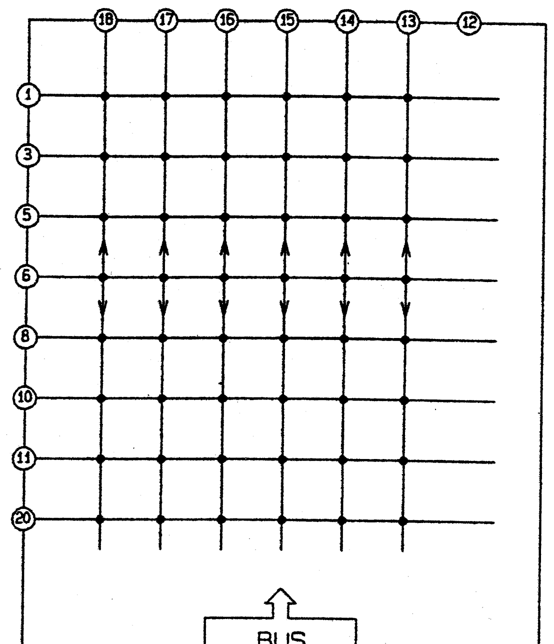
IC351 TDA7263


RFI 27K
MUTE
SC PROTECTION
REFERENCES
Tj
TURN-ON AND-OFF
TH PROTECTION
RFI 27K

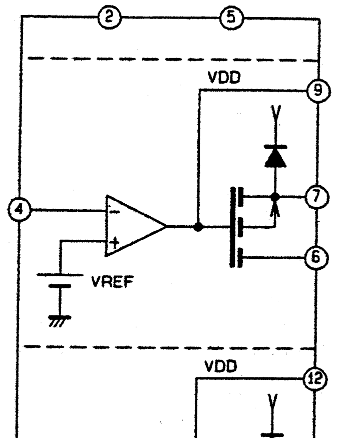
IC401 TDA8171


FLYBACK GENERATOR
POWER AMPLIFIER
REF VOLTAGE
THERMAL PROTECTION

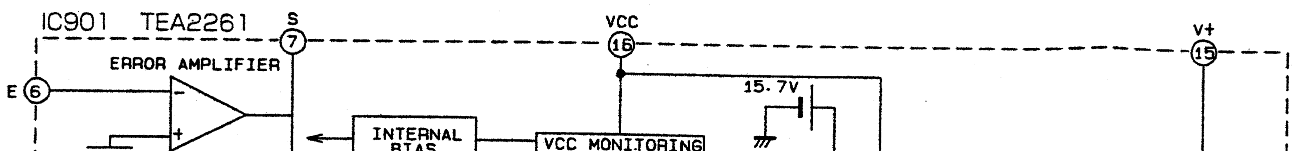
IC202 TEA6415C

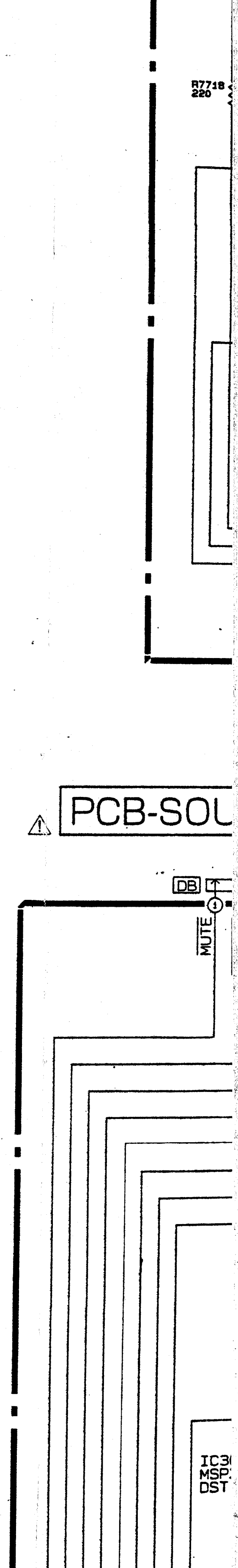


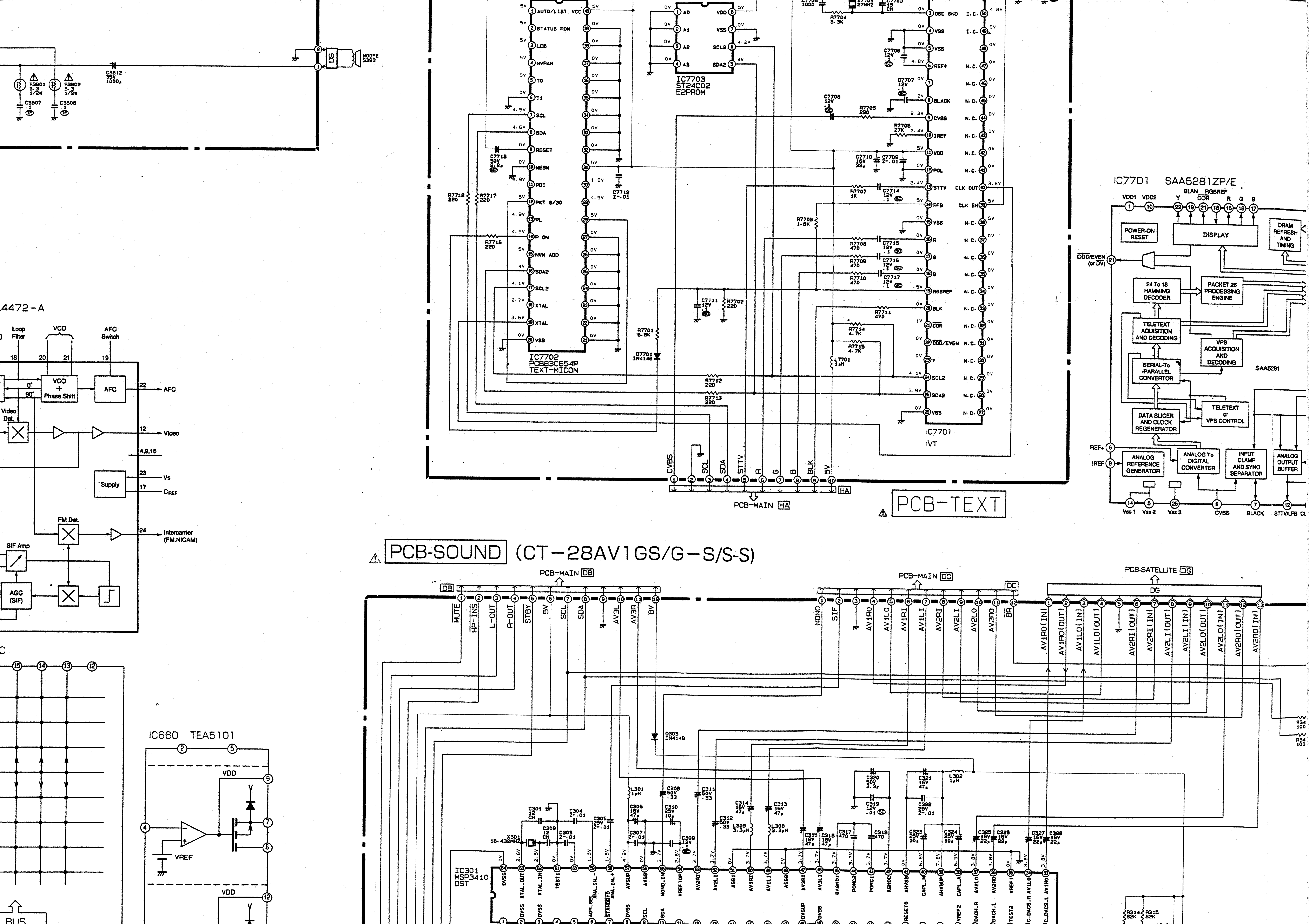
IC660 TEA5101

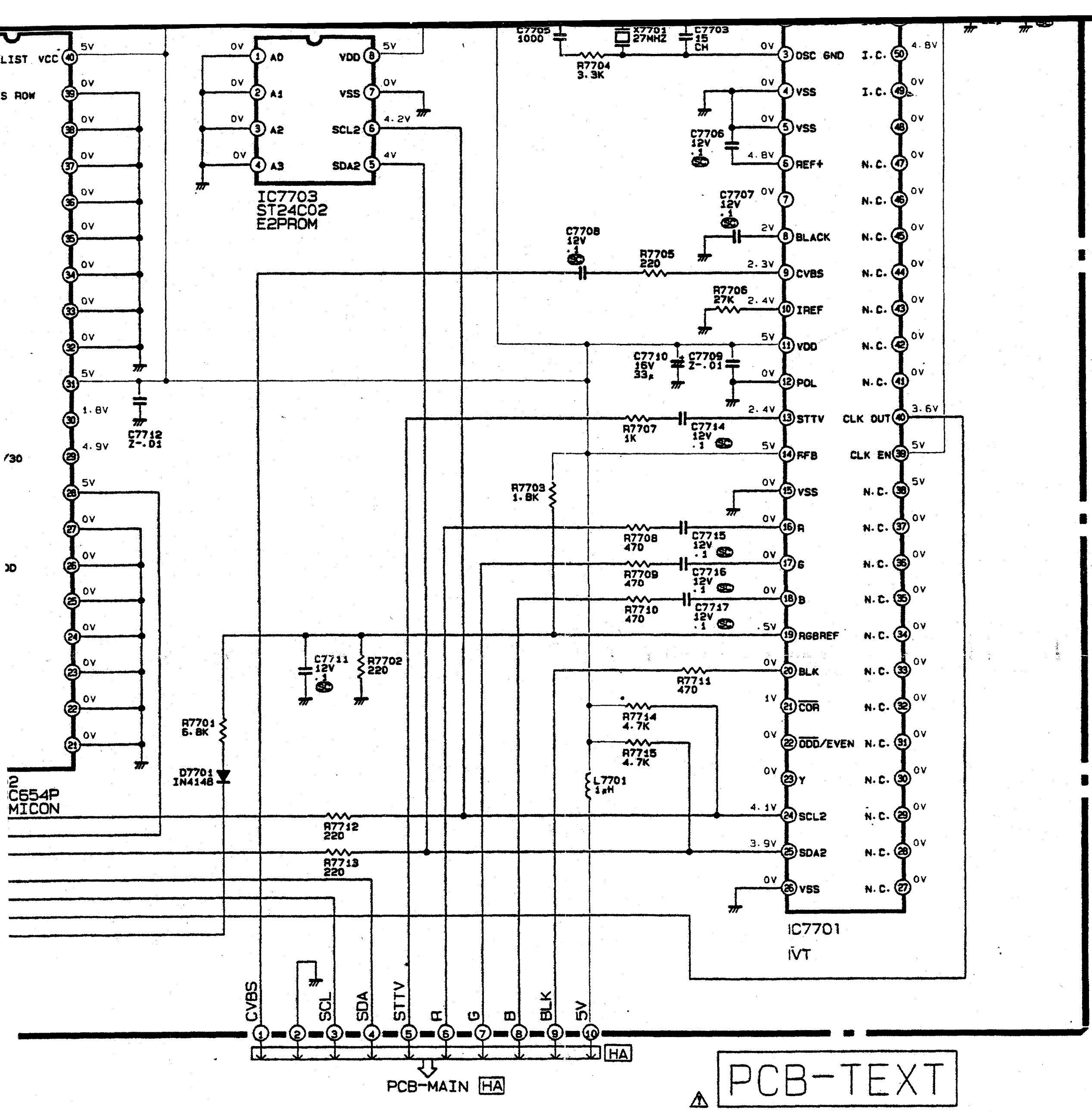

VDD
VREF
VDD

IC901 TEA2261

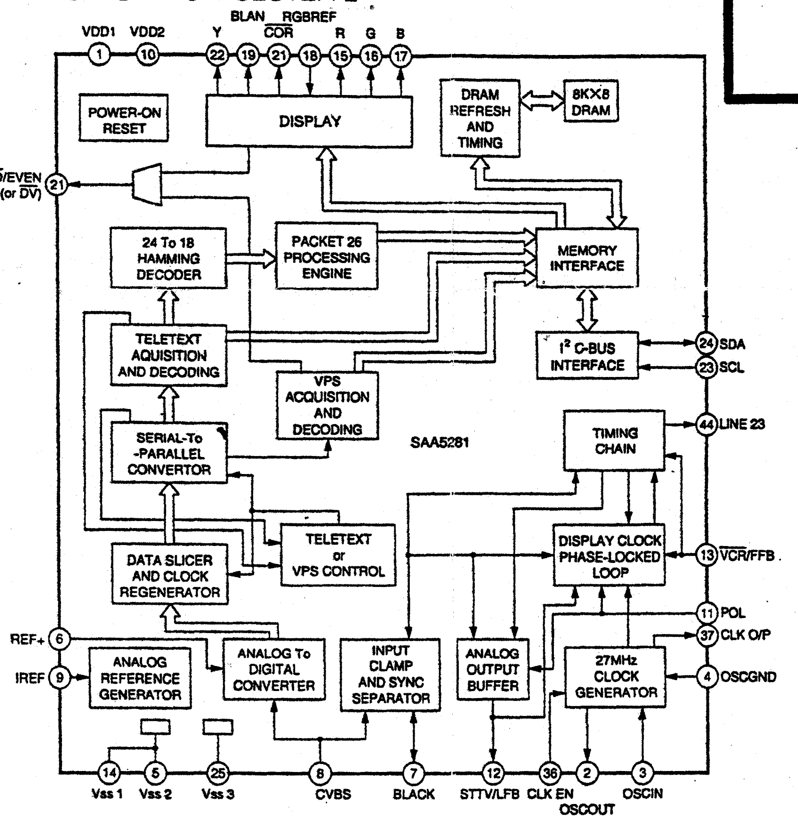

S
VCC
V+
ERROR AMPLIFIER
E
INTERNAL BIAS
VCC MONITORING
15.7V

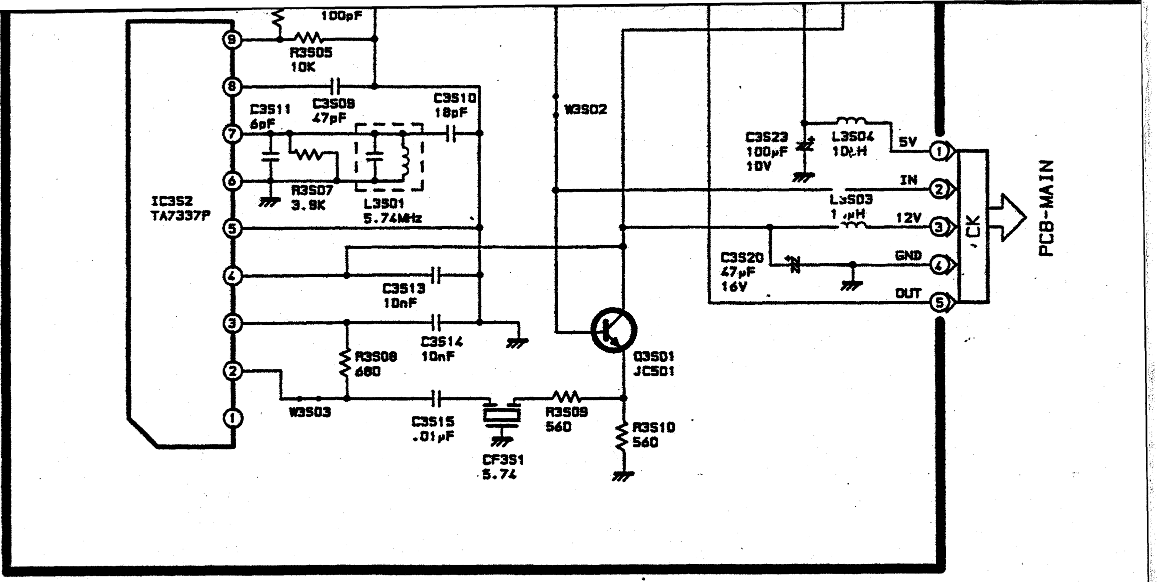

R7718 220
PCB-SOU
DB
MUTE
IC3
MSP
DST


PCB-TEXT
PCB-SOUND (CT-28AV1GS/G-S/S-S)
IC7702
PCB83C654P
TEXT-MICON
IC7703
ST24C02
E2PROM
IC7701
IVT
IC7701 SAA5281ZP/E
SAA5281
POWER-ON RESET
DISPLAY
DRAM REFRESH AND TIMING
24 To 18 HAMMING DECODER
PACKET 26 PROCESSING ENGINE
TELETEXT AQUISITION AND DECODING
VPS ACQUISITION AND DECODING
SERIAL-To -PARALLEL CONVERTOR
TELETEXT or VPS CONTROL
DATA SLICER AND CLOCK REGENERATOR
ANALOG REFERENCE GENERATOR
ANALOG To DIGITAL CONVERTER
INPUT CLAMP AND SYNC SEPARATOR
ANALOG OUTPUT BUFFER
PCB-MAIN HA
CVBS
SCL
SDA
STTV
R
G
B
BLK
5V
4472-A
Loop Filter
VCO
AFC Switch
VCO + Phase Shift
AFC
Video Det.
Video
Supply
Vs
CREF
FM Det.
Intercarrier (FM.NICAM)
SIF Amp
AGC (SIF)
IC660 TEA5101
VDD
VREF
BUS
PCB-MAIN DB
MUTE
HP-INS
L-OUT
R-OUT
STBY
5V
SCL
SDA
AV3L
AV3R
8V
PCB-MAIN DC
MONO
SIF
AV1RO
AV1LO
AV1RI
AV1LI
AV2RI
AV2LI
AV2LO
AV2RO
BR
PCB-SATELLITE DG
DG
AV1RO(IN)
AV1RO(OUT)
AV1LO(IN)
AV1LO(OUT)
AV2RI(OUT)
AV2RI(IN)
AV2LI(OUT)
AV2LI(IN)
AV2LO(OUT)
AV2LO(IN)
AV2RO(OUT)
AV2RO(IN)
IC301
MSP3410
DST
X301
18.432MHZ
D303
IN4148
WOOFE
S393
DS


IC7703
ST24C02
E2PROM
IC7701
IVT
C654P
MICON
CVBS
SCL
SDA
STTV
R
G
B
BLK
5V
HA
PCB-MAIN HA
PCB-TEXT

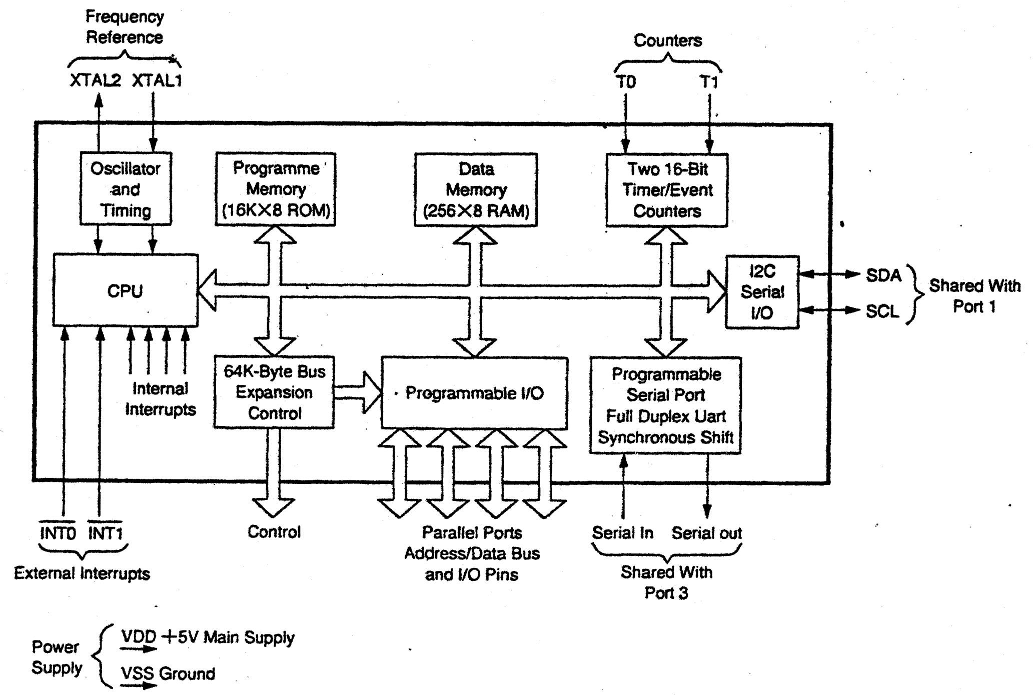
IC7701 SAA5281ZP/E


VDD1
VDD2
Y
BLAN
COR
RGBREF
R
G
B
POWER-ON RESET
DISPLAY
DRAM REFRESH AND TIMING
8KX8 DRAM
ODD/EVEN (or DV)
24 To 18 HAMMING DECODER
PACKET 26 PROCESSING ENGINE
MEMORY INTERFACE
TELETEXT AQUISITION AND DECODING
I² C-BUS INTERFACE
SDA
SCL
VPS ACQUISITION AND DECODING
SERIAL-To -PARALLEL CONVERTOR
SAA5281
TIMING CHAIN
LINE 23
TELETEXT or VPS CONTROL
DISPLAY CLOCK PHASE-LOCKED LOOP
VCR/FFB
DATA SLICER AND CLOCK REGENERATOR
POL
CLK O/P
REF+
IREF
ANALOG REFERENCE GENERATOR
ANALOG To DIGITAL CONVERTER
INPUT CLAMP AND SYNC SEPARATOR
ANALOG OUTPUT BUFFER
27MHz CLOCK GENERATOR
OSCGND
Vss 1
Vss 2
Vss 3
CVBS
BLACK
STTV/LFB
CLK EN
OSCOUT
OSCIN

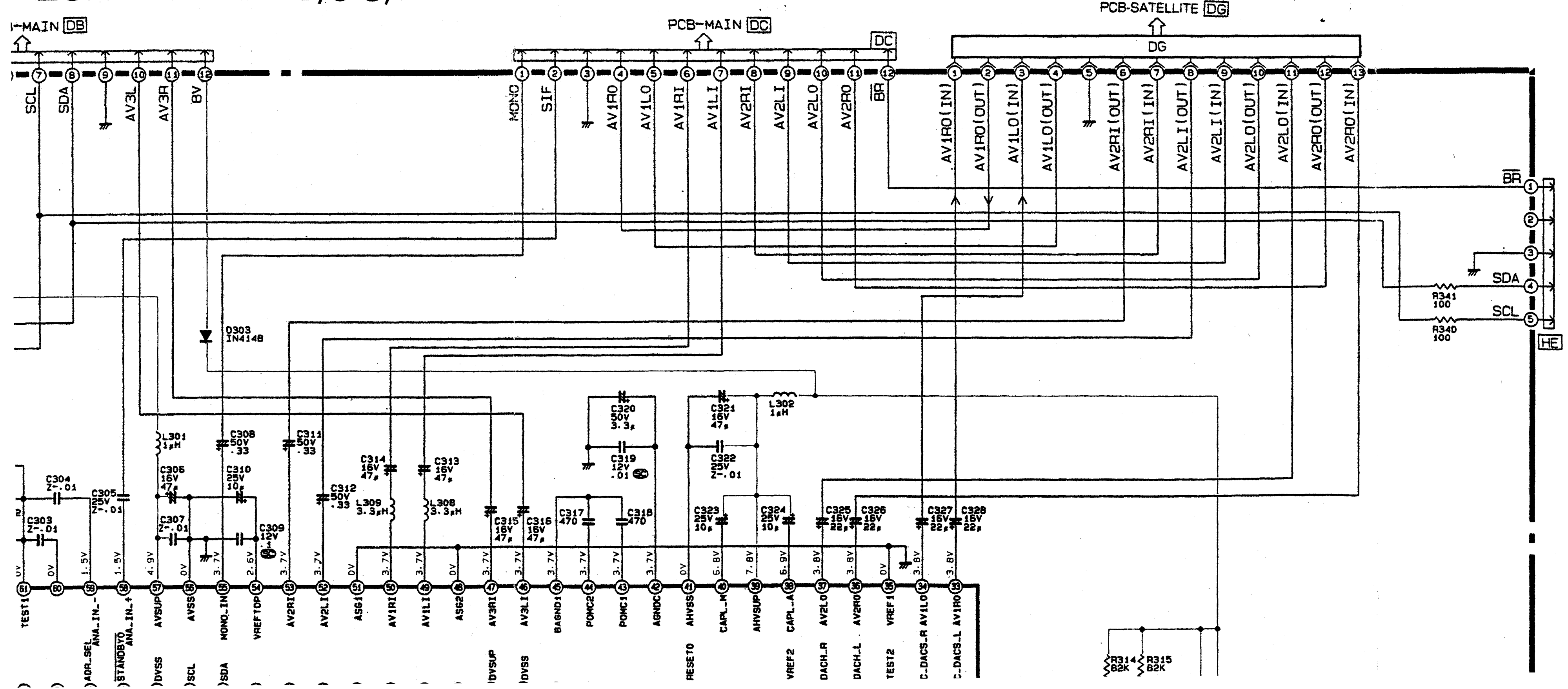

IC3S2
TA7337P
L3S01
5.74MHz
CF3S1
5.74
Q3S01
JC501
5V
IN
12V
GND
OUT
CK
PCB-MAIN

⚠ PCB-IDENT

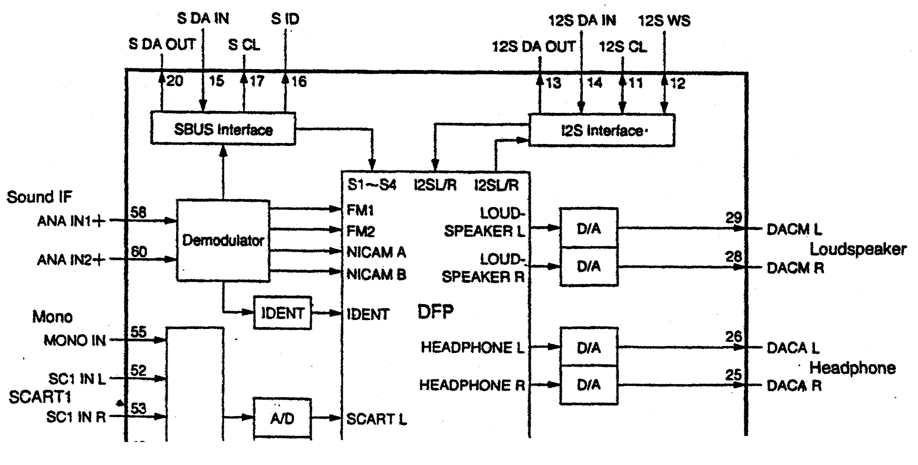
IC7702 PCB83C654P


Frequency Reference
XTAL2
XTAL1
Counters
T0
T1
Oscillator and Timing
Programme Memory (16K×8 ROM)
Data Memory (256×8 RAM)
Two 16-Bit Timer/Event Counters
CPU
I2C Serial I/O
SDA
SCL
Shared With Port 1
Internal Interrupts
64K-Byte Bus Expansion Control
Programmable I/O
Programmable Serial Port Full Duplex Uart Synchronous Shift
INT0
INT1
External Interrupts
Control
Parallel Ports Address/Data Bus and I/O Pins
Serial In
Serial out
Shared With Port 3
Power Supply
VDD +5V Main Supply
VSS Ground

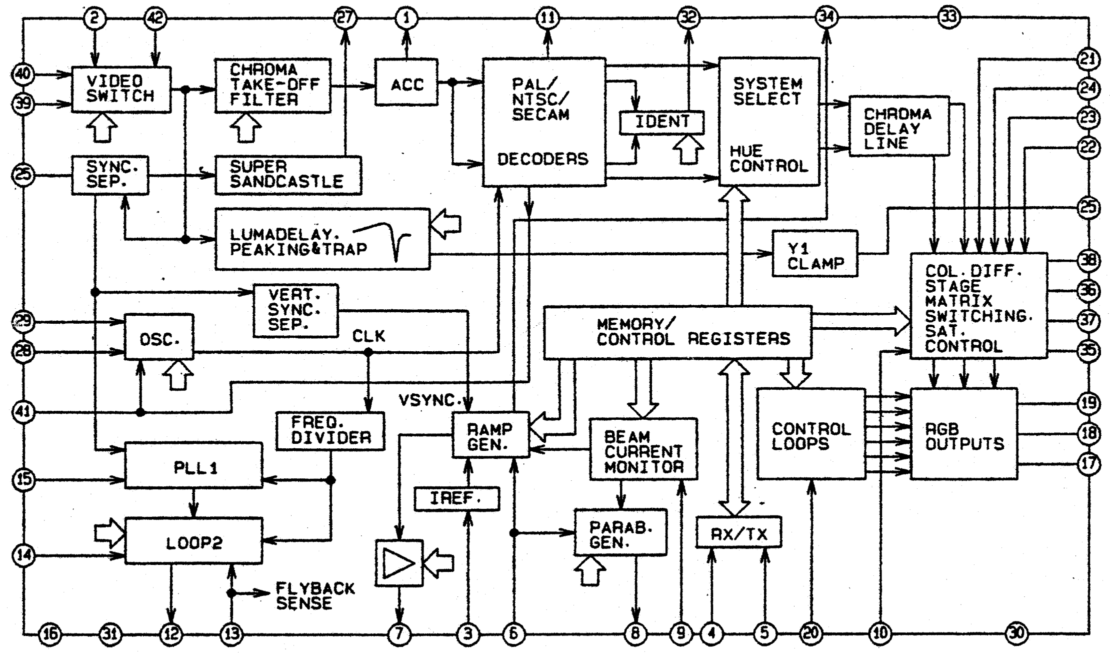
-28AV1GS/G-S/S-S)


PCB-MAIN DB
PCB-MAIN DC
DC
PCB-SATELLITE DG
DG
SCL
SDA
AV3L
AV3R
8V
MONO
SIF
AV1RO
AV1LO
AV1RI
AV1LI
AV2RI
AV2LI
AV2LO
AV2RO
BR
AV1RO(IN)
AV1RO(OUT)
AV1LO(IN)
AV1LO(OUT)
AV2RI(OUT)
AV2RI(IN)
AV2LI(OUT)
AV2LI(IN)
AV2LO(OUT)
AV2LO(IN)
AV2RO(OUT)
AV2RO(IN)
SDA
SCL
HE
D303
1N4148

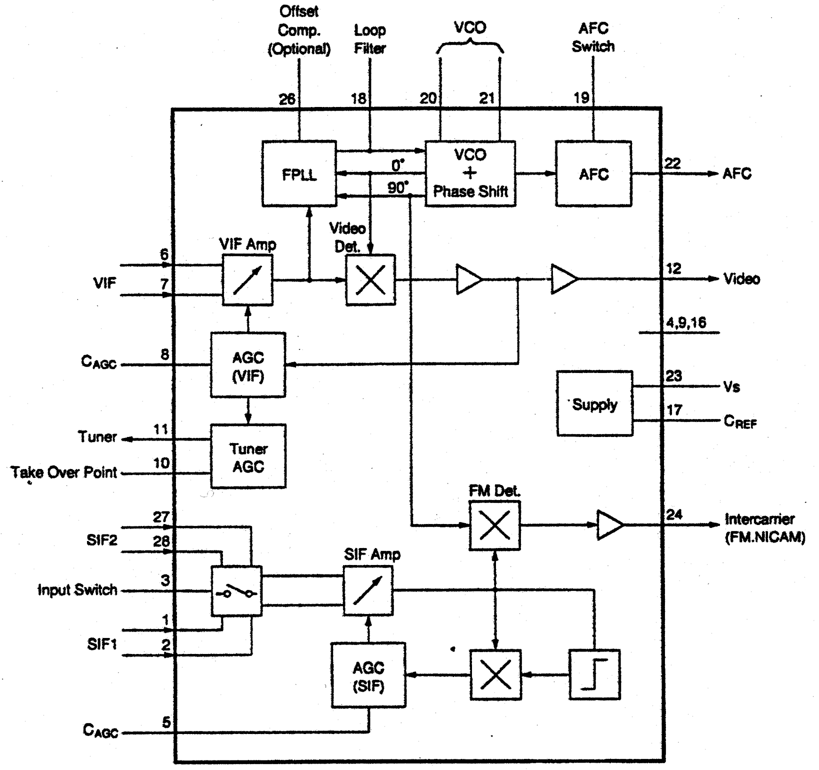
IC301 MSP3400/MSP3410


S DA IN
S ID
S DA OUT
S CL
I2S DA IN
I2S WS
I2S DA OUT
I2S CL
SBUS Interface
I2S Interface
Sound IF
ANA IN1+
ANA IN2+
Demodulator
S1~S4
I2SL/R
I2SL/R
FM1
FM2
NICAM A
NICAM B
LOUD-SPEAKER L
LOUD-SPEAKER R
D/A
DACM L
DACM R
Loudspeaker
IDENT
DFP
Mono
MONO IN
SC1 IN L
SCART1
SC1 IN R
A/D
SCART L
HEADPHONE L
HEADPHONE R
DACA L
DACA R
Headphone

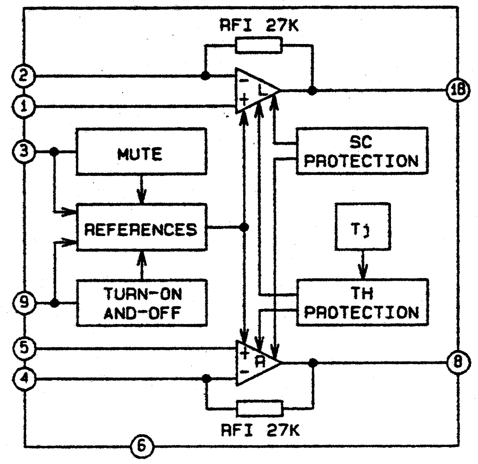
IC201 MC44031


VIDEO SWITCH
CHROMA TAKE-OFF FILTER
ACC
PAL/ NTSC/ SECAM DECODERS
IDENT
SYSTEM SELECT
HUE CONTROL
CHROMA DELAY LINE
SYNC. SEP.
SUPER SANDCASTLE
LUMADELAY. PEAKING&TRAP
Y1 CLAMP
VERT. SYNC. SEP.
OSC.
CLK
MEMORY/ CONTROL REGISTERS
COL. DIFF. STAGE MATRIX SWITCHING. SAT. CONTROL
VSYNC.
FREQ. DIVIDER
RAMP GEN.
BEAM CURRENT MONITOR
CONTROL LOOPS
RGB OUTPUTS
PLL1
IREF.
PARAB. GEN.
RX/TX
LOOP2
FLYBACK SENSE
2
42
27
1
11
32
34
33
40
39
25
29
28
41
15
14
21
24
23
22
26
38
36
37
35
19
18
17
16
31
12
13
7
3
6
8
9
4
5
20
10
30

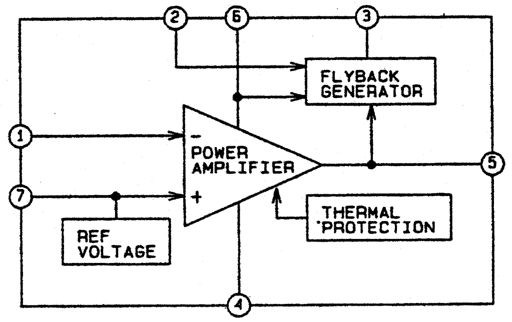
IC101 TDA4472-A


Offset Comp. (Optional)
Loop Filter
VCO
AFC Switch
26
18
20
21
19
FPLL
0°
90°
VCO + Phase Shift
AFC
22
AFC
VIF Amp
Video Det.
12
Video
VIF
6
7
4,9,16
CAGC
8
AGC (VIF)
23
Vs
Supply
17
CREF
Tuner
11
Tuner AGC
Take Over Point
10
FM Det.
24
Intercarrier (FM.NICAM)
27
SIF2
28
SIF Amp
Input Switch
3
1
SIF1
2
AGC (SIF)
CAGC
5

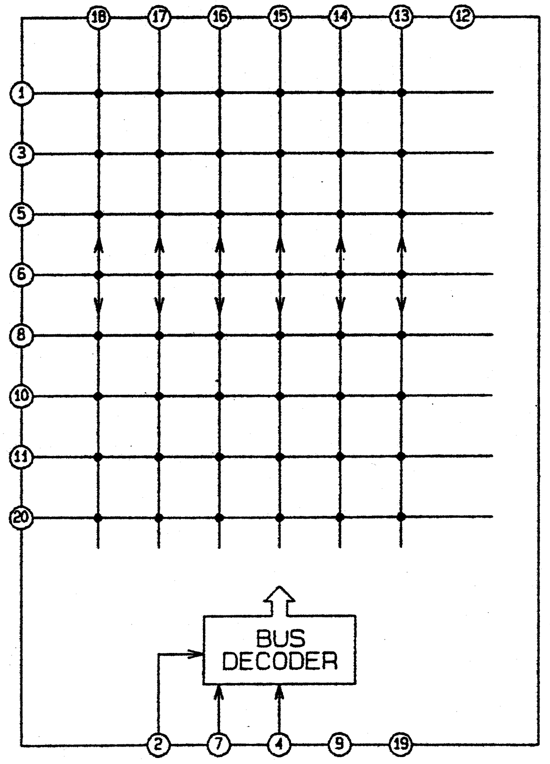
IC351 TDA7263


RFI 27K
2
1
18
3
MUTE
SC PROTECTION
REFERENCES
Tj
9
TURN-ON AND-OFF
TH PROTECTION
5
4
8
RFI 27K
6

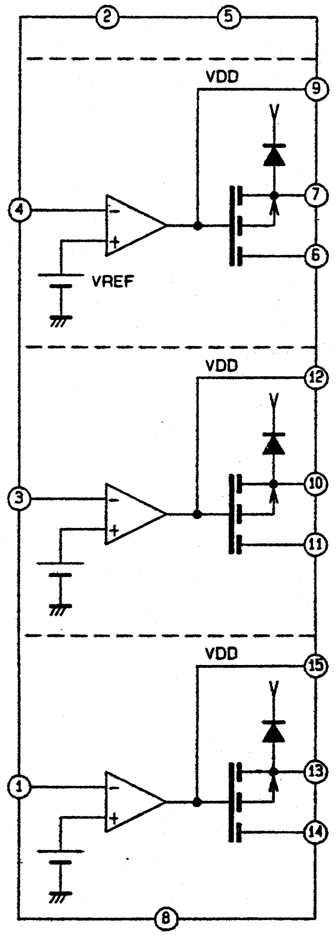
IC401 TDA8171


2
6
3
FLYBACK GENERATOR
1
POWER AMPLIFIER
5
7
THERMAL PROTECTION
REF VOLTAGE
4

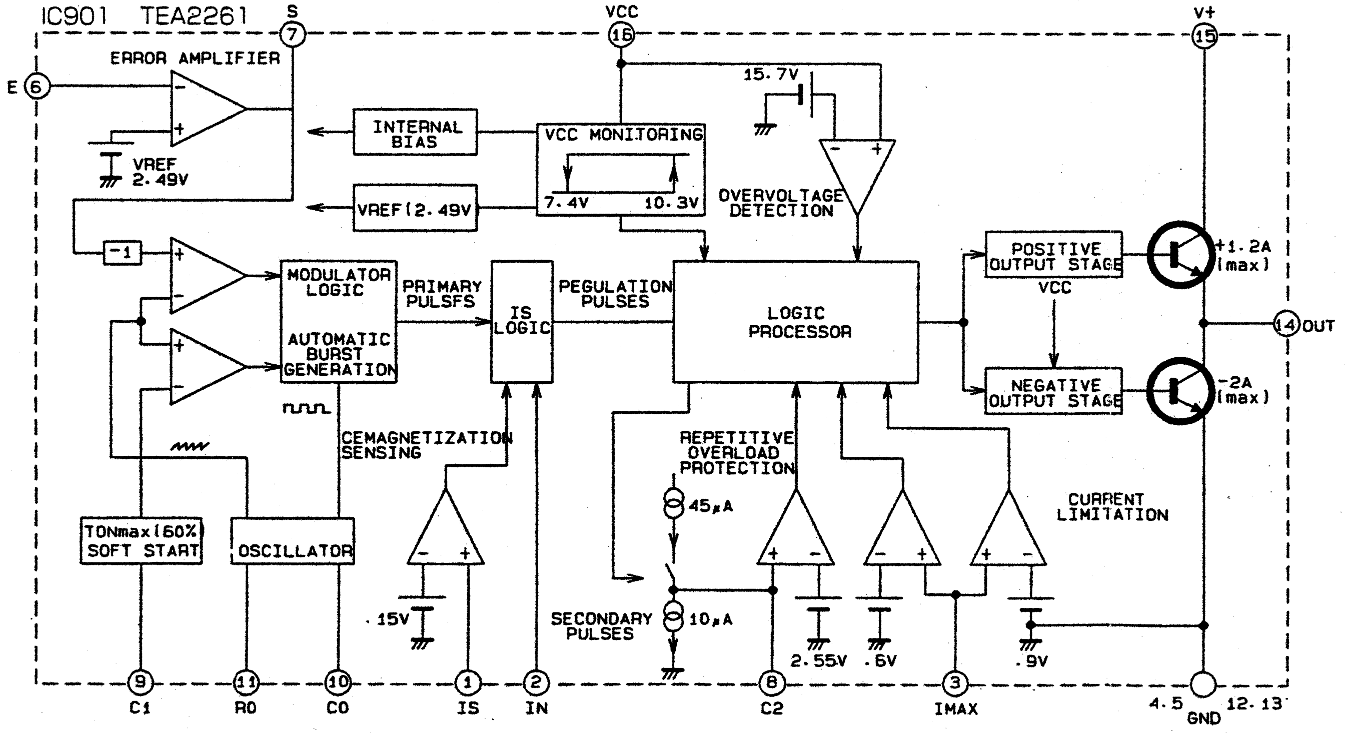
IC202 TEA6415C


18
17
16
15
14
13
12
1
3
5
6
8
10
11
20
BUS DECODER
2
7
4
9
19

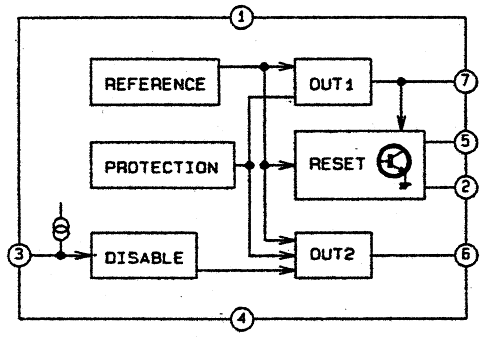
IC660 TEA5101

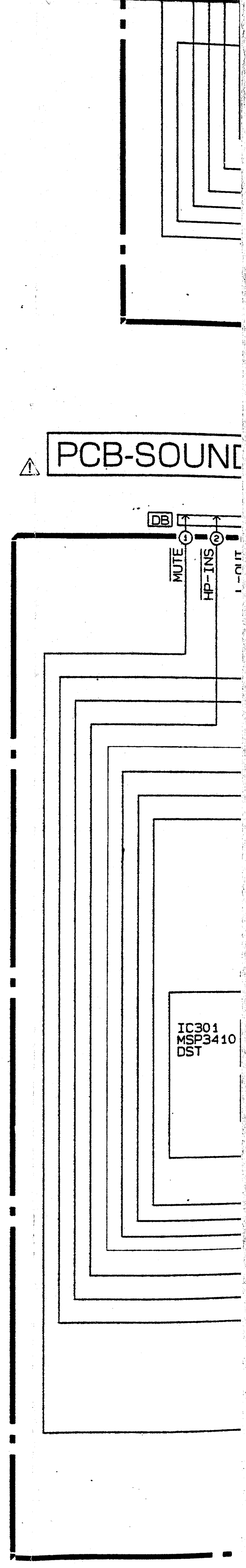

2
5
VDD
9
7
4
6
VREF
VDD
12
10
3
11
VDD
15
13
1
14
8

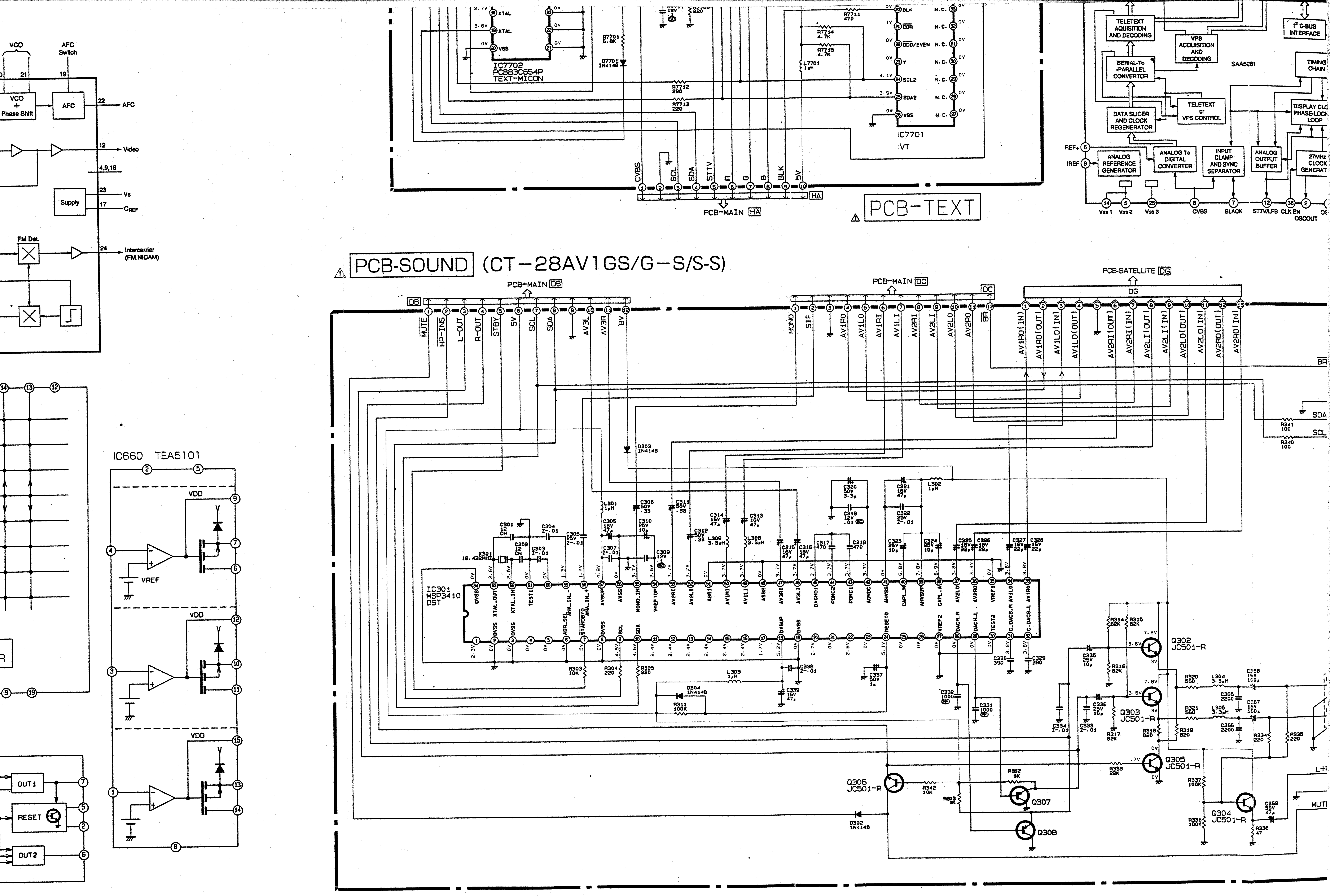
IC901 TEA2261


S
7
VCC
16
V+
15
E
6
ERROR AMPLIFIER
INTERNAL BIAS
VCC MONITORING
15.7V
VREF 2.49V
VREF (2.49V
7.4V
10.3V
OVERVOLTAGE DETECTION
-1
POSITIVE OUTPUT STAGE
+1.2A (max)
MODULATOR LOGIC
PRIMARY PULSFS
IS LOGIC
PEGULATION PULSES
LOGIC PROCESSOR
VCC
14
OUT
AUTOMATIC BURST GENERATION
NEGATIVE OUTPUT STAGE
-2A (max)
CEMAGNETIZATION SENSING
REPETITIVE OVERLOAD PROTECTION
45μA
CURRENT LIMITATION
TONmax (60%) SOFT START
OSCILLATOR
15V
SECONDARY PULSES
10μA
2.55V
.6V
.9V
9
11
10
1
2
8
3
4.5
12.13
C1
RO
CO
IS
IN
C2
IMAX
GND

IC951 TDA8137


1
REFERENCE
OUT1
7
PROTECTION
RESET
5
2
3
DISABLE
OUT2
6
4

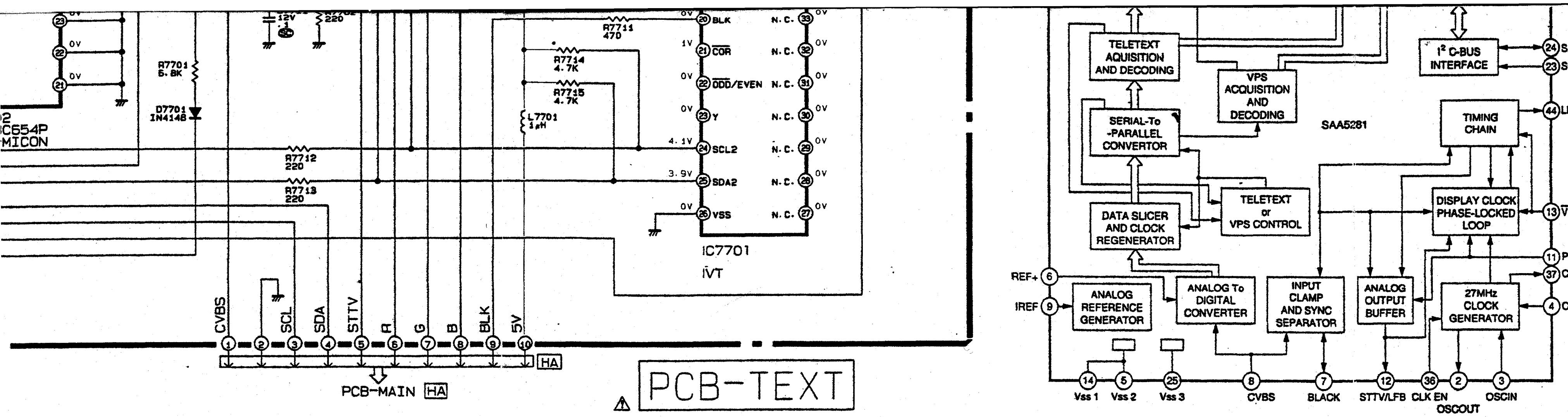

PCB-SOUND
DB
1
2
MUTE
HP-INS
IC301 MSP3410 DST



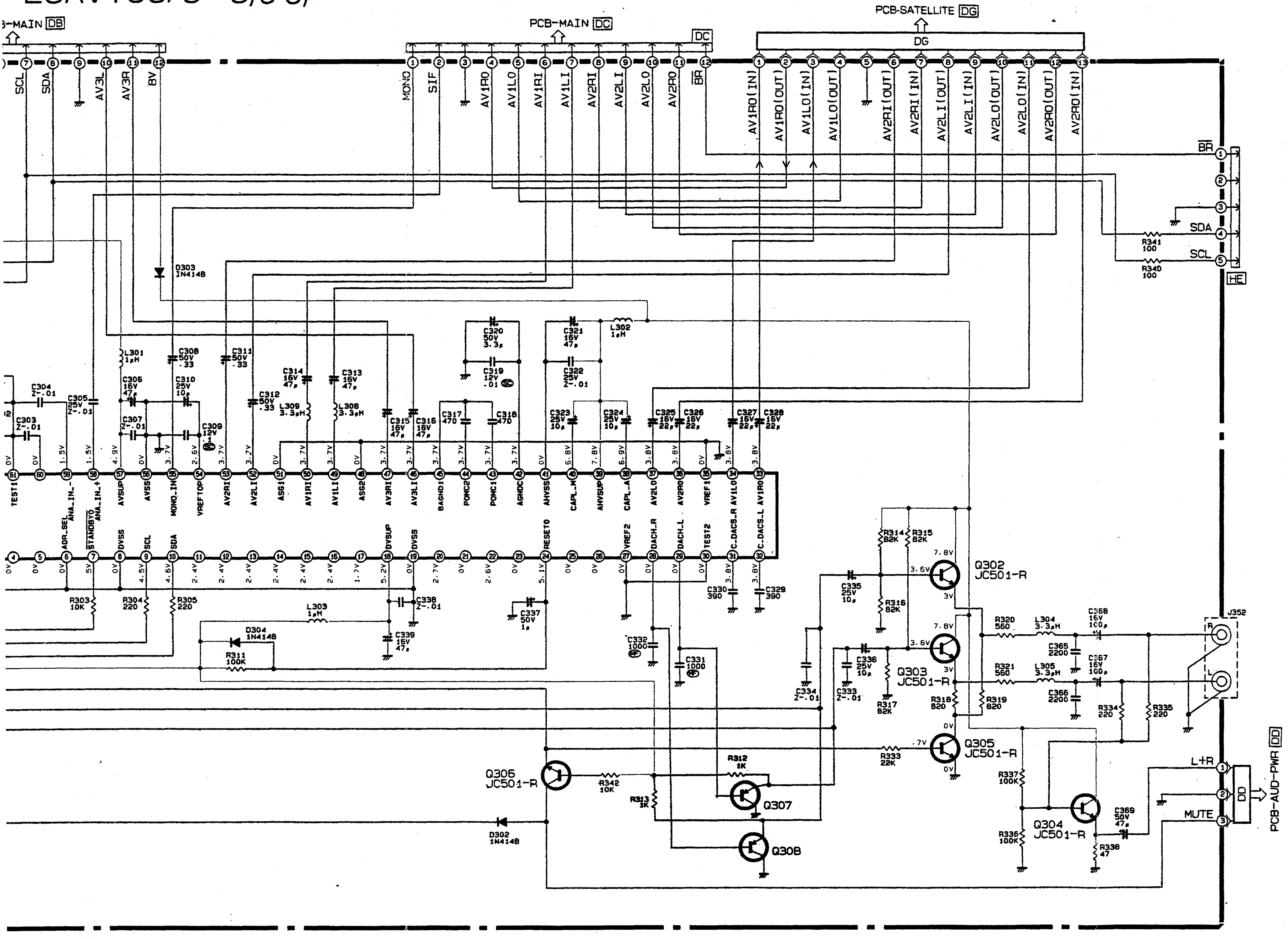
⚠ PCB-TEXT

⚠ PCB-SOUND (CT-28AV1GS/G-S/S-S)

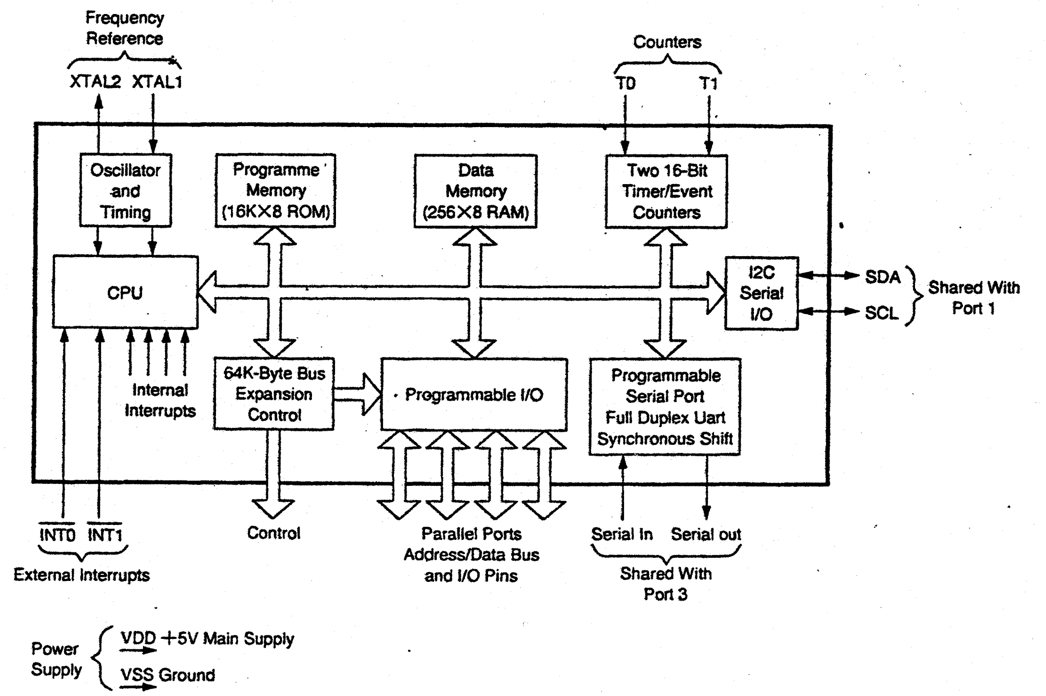
VCO
AFC Switch
VCO + Phase Shift
AFC
AFC
Video
4,9,16
Supply
Vs
CREF
FM Det.
Intercarrier (FM.NICAM)
IC7702
PCB83C654P
TEXT-MICON
XTAL
VSS
R7701 6.8K
D7701 1N4148
R7711 470
R7714 4.7K
R7715 4.7K
L7701 1μH
R7712 220
R7713 220
BLK
COR
ODD/EVEN
Y
SCL2
SDA2
VSS
N.C.
IC7701
IVT
CVBS
SCL
SDA
STTV
R
G
B
BLK
5V
HA
PCB-MAIN HA
TELETEXT AQUISITION AND DECODING
VPS ACQUISITION AND DECODING
I² C-BUS INTERFACE
SERIAL-To -PARALLEL CONVERTOR
SAA5281
TIMING CHAIN
TELETEXT or VPS CONTROL
DATA SLICER AND CLOCK REGENERATOR
DISPLAY CLOCK PHASE-LOCK LOOP
REF+
IREF
ANALOG REFERENCE GENERATOR
ANALOG To DIGITAL CONVERTER
INPUT CLAMP AND SYNC SEPARATOR
ANALOG OUTPUT BUFFER
27MHz CLOCK GENERATOR
Vss 1
Vss 2
Vss 3
CVBS
BLACK
STTV/LFB
CLK EN
OSCOUT
IC660 TEA5101
VDD
VREF
OUT 1
RESET
OUT2
PCB-MAIN DB
DB
MUTE
HP-INS
L-OUT
R-OUT
STBY
5V
SCL
SDA
AV3L
AV3R
8V
PCB-MAIN DC
DC
MONO
SIF
AV1RO
AV1LO
AV1RI
AV1LI
AV2RI
AV2LI
AV2LO
AV2RO
BR
PCB-SATELLITE DG
DG
AV1RO(IN)
AV1RO(OUT)
AV1LO(IN)
AV1LO(OUT)
AV2RI(OUT)
AV2RI(IN)
AV2LI(OUT)
AV2LI(IN)
AV2LO(OUT)
AV2LO(IN)
AV2RO(OUT)
AV2RO(IN)
SDA
SCL
R341 100
R340 100
BR
IC301
MSP3410
DST
X301 18.432MHZ
D303 1N4148
L301 1μH
L302 1μH
L303 1μH
L308 3.3μH
L309 3.3μH
D304 1N4148
R311 100K
R303 10K
R304 220
R305 220
Q302 JC501-R
Q303 JC501-R
Q304 JC501-R
Q305 JC501-R
Q306 JC501-R
Q307
Q308
D302 1N4148
R342 10K
R312 1K
R313 1K
R314 82K
R315 82K
R316 82K
R317 82K
R318 820
R319 820
R320 560
R321 560
L304 3.3μH
L305 3.3μH
R333 22K
R334 220
R335 220
R336 100K
R337 100K
R338 47
L+R
MUTE


IC7701
IVT
C654P
MICON
R7701 6.8K
D7701 1N4148
R7711 470
R7714 4.7K
R7715 4.7K
L7701 1μH
R7712 220
R7713 220
BLK
COR
ODD/EVEN
Y
SCL2
SDA2
VSS
N.C.
CVBS
SCL
SDA
STTV
R
G
B
BLK
5V
HA
PCB-MAIN HA
PCB-TEXT
TELETEXT AQUISITION AND DECODING
VPS ACQUISITION AND DECODING
SERIAL-To -PARALLEL CONVERTOR
DATA SLICER AND CLOCK REGENERATOR
TELETEXT or VPS CONTROL
ANALOG REFERENCE GENERATOR
ANALOG To DIGITAL CONVERTER
INPUT CLAMP AND SYNC SEPARATOR
ANALOG OUTPUT BUFFER
27MHz CLOCK GENERATOR
DISPLAY CLOCK PHASE-LOCKED LOOP
TIMING CHAIN
I² C-BUS INTERFACE
SAA5281
SDA
SCL
LINE 23
VCR/FFB
POL
CLK O/P
OSCGND
REF+
IREF
Vss 1
Vss 2
Vss 3
CVBS
BLACK
STTV/LFB
CLK EN
OSCOUT
OSCIN

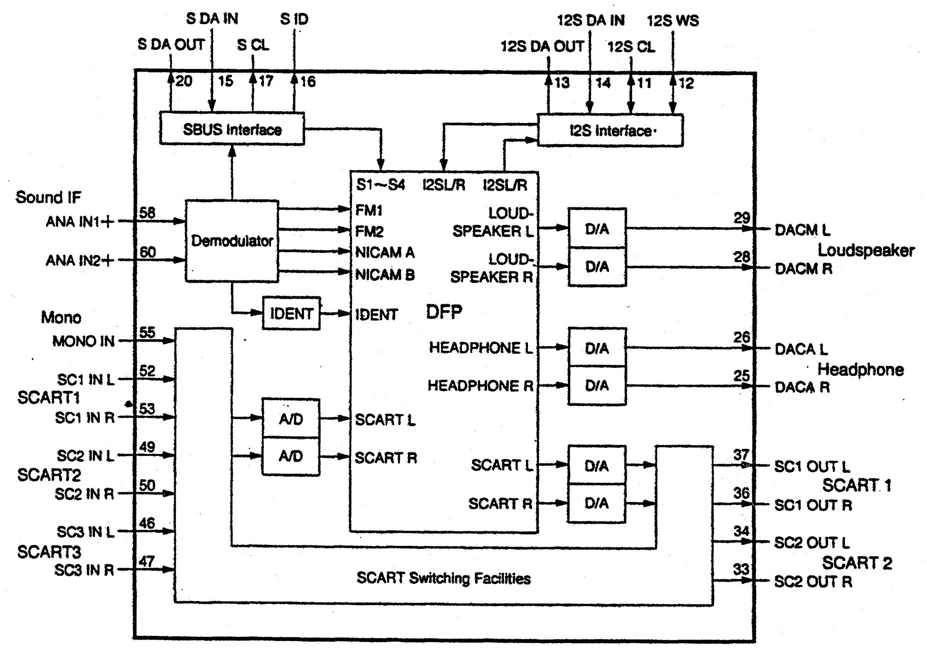
-28AV1GS/G-S/S-S)


PCB-MAIN DB
PCB-MAIN DC
DC
PCB-SATELLITE DG
DG
SCL
SDA
AV3L
AV3R
8V
MONO
SIF
AV1RO
AV1LO
AV1RI
AV1LI
AV2RI
AV2LI
AV2LO
AV2RO
BR
AV1RI(IN)
AV1RO(OUT)
AV1LO(IN)
AV1LO(OUT)
AV2RI(OUT)
AV2RI(IN)
AV2LI(OUT)
AV2LI(IN)
AV2LO(OUT)
AV2LO(IN)
AV2RO(OUT)
AV2RO(IN)
HE
R341 100
R340 100
D303 1N4148
L301 1μH
L309 3.3μH
L308 3.3μH
L302 1μH
L303 1μH
D304 1N4148
R311 100K
R303 10K
R304 220
R305 220
J352
Q302 JC501-R
Q303 JC501-R
Q305 JC501-R
Q304 JC501-R
Q306 JC501-R
Q307
Q308
R342 10K
R312 1K
R313 1K
D302 1N4148
R314 82K
R315 82K
R316 82K
R317 82K
R318 820
R319 820
R320 560
R321 560
L304 3.3μH
L305 3.3μH
R333 22K
R334 220
R335 220
R337 100K
R336 100K
R338 47
C369 50V 47μ
L+R
MUTE
DD
PCB-AUD-PWR DD

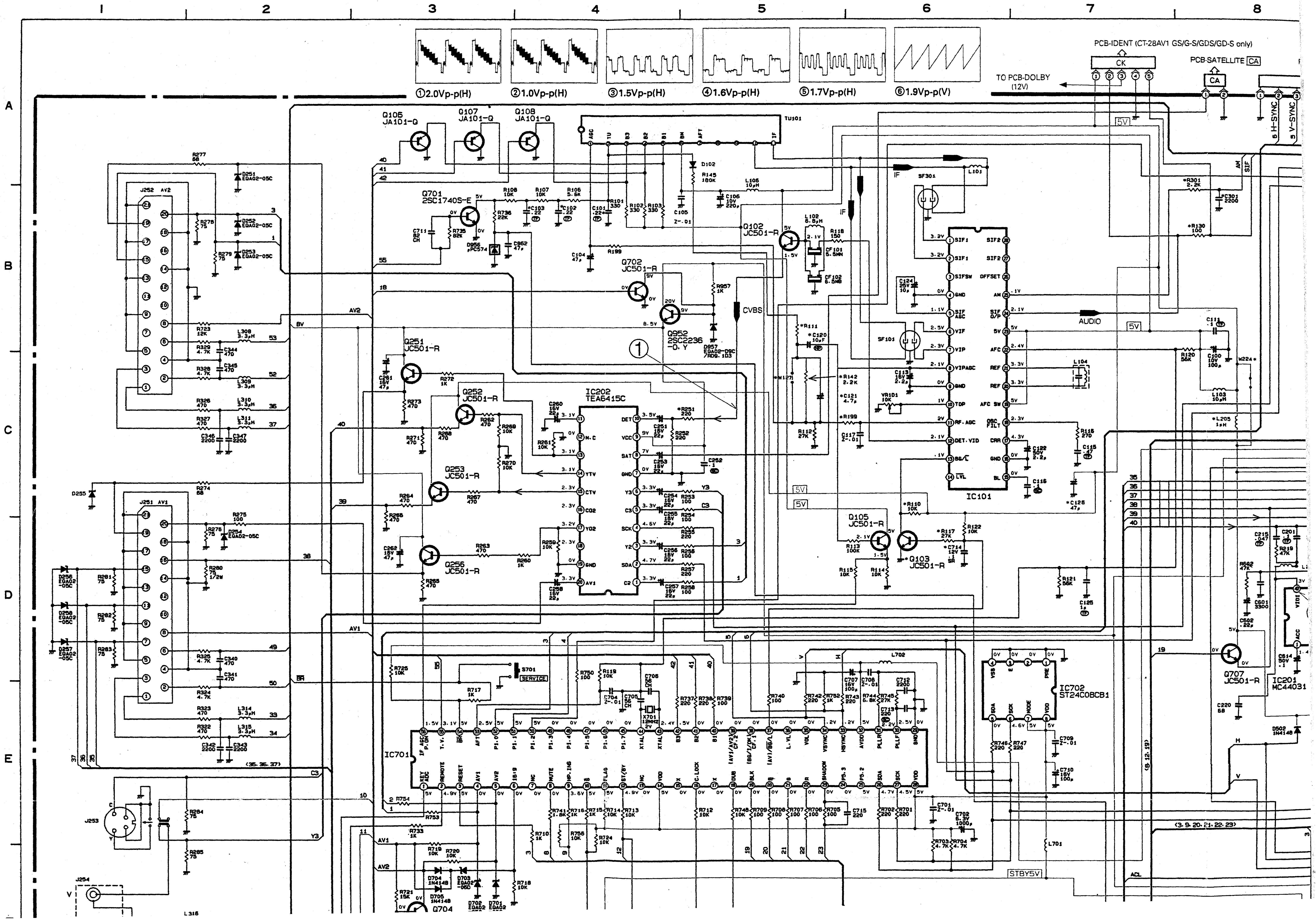
IC7702 PCB83C654P


Frequency Reference
XTAL2
XTAL1
Counters
T0
T1
Oscillator and Timing
Programme Memory (16K×8 ROM)
Data Memory (256×8 RAM)
Two 16-Bit Timer/Event Counters
CPU
I2C Serial I/O
SDA
SCL
Shared With Port 1
Internal Interrupts
64K-Byte Bus Expansion Control
Programmable I/O
Programmable Serial Port Full Duplex Uart Synchronous Shift
INT0
INT1
External Interrupts
Control
Parallel Ports Address/Data Bus and I/O Pins
Serial In
Serial out
Shared With Port 3
Power Supply
VDD +5V Main Supply
VSS Ground

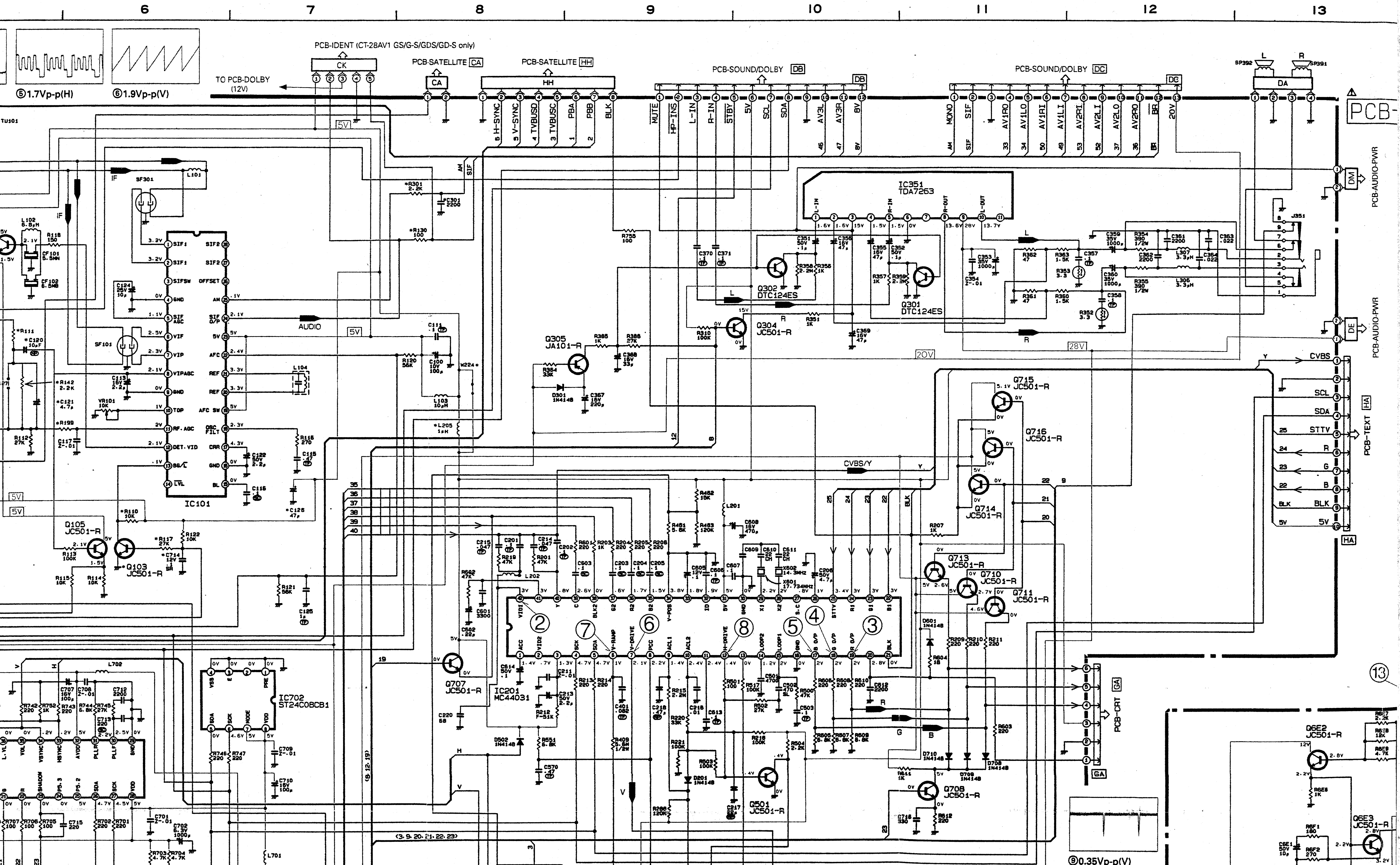
IC301 MSP3400/MSP3410

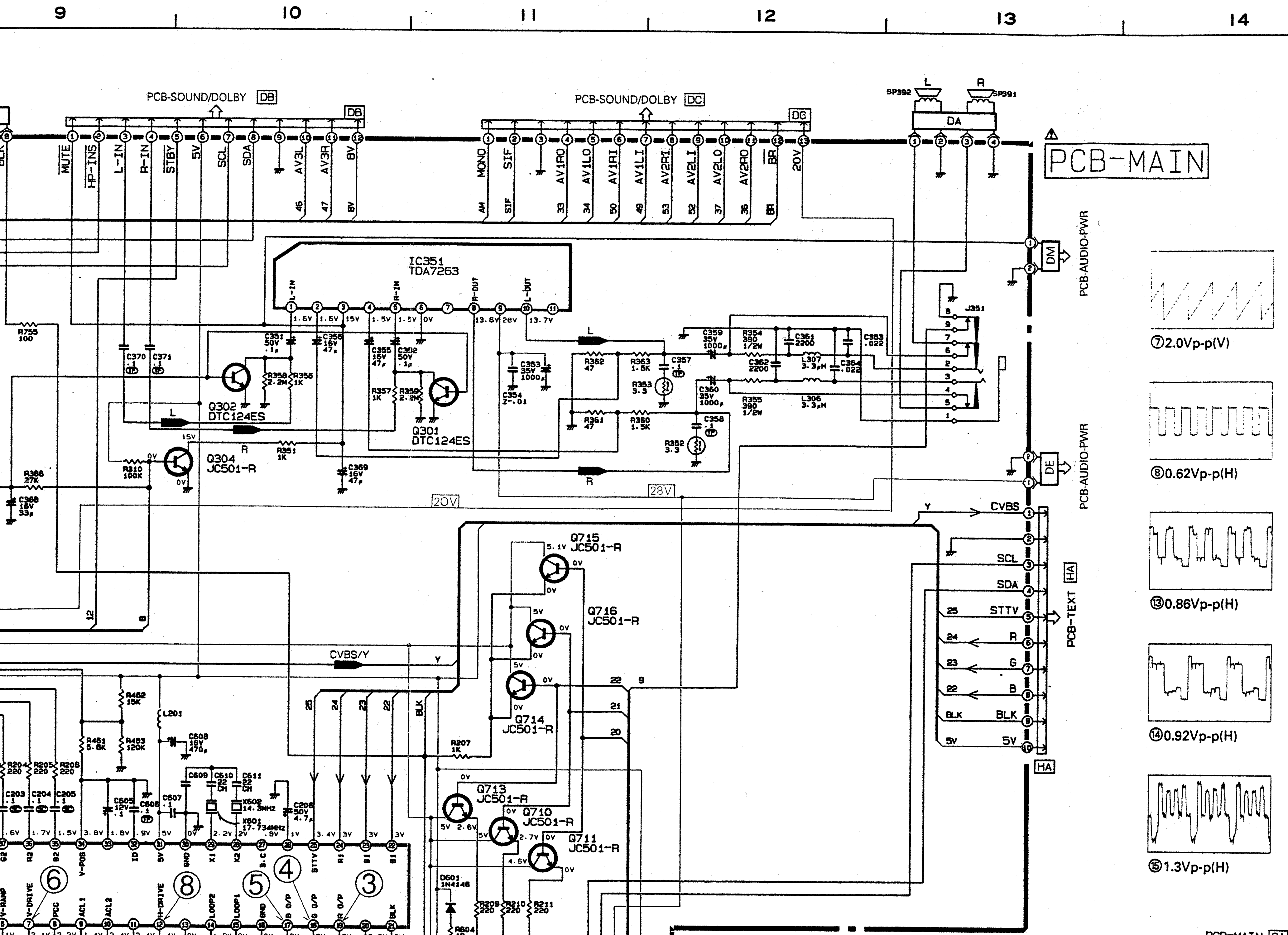

S DA IN
S ID
S DA OUT
S CL
12S DA IN
12S WS
12S DA OUT
12S CL
SBUS Interface
I2S Interface
Sound IF
ANA IN1+
ANA IN2+
Demodulator
S1~S4
FM1
FM2
NICAM A
NICAM B
I2SL/R
LOUD-SPEAKER L
LOUD-SPEAKER R
D/A
DACM L
DACM R
Loudspeaker
IDENT
DFP
Mono
MONO IN
SCART1
SC1 IN L
SC1 IN R
SCART2
SC2 IN L
SC2 IN R
SCART3
SC3 IN L
SC3 IN R
A/D
SCART L
SCART R
HEADPHONE L
HEADPHONE R
DACA L
DACA R
Headphone
SC1 OUT L
SC1 OUT R
SCART 1
SC2 OUT L
SC2 OUT R
SCART 2
SCART Switching Facilities

CT-28AV1 G-S
CT-28AV1 GS
CT-28AV1 GD-S
CT-28AV1 GDS
CT-28AV1 SD-S
CT-28AV1 S-S
CT-28AV1 ED-S



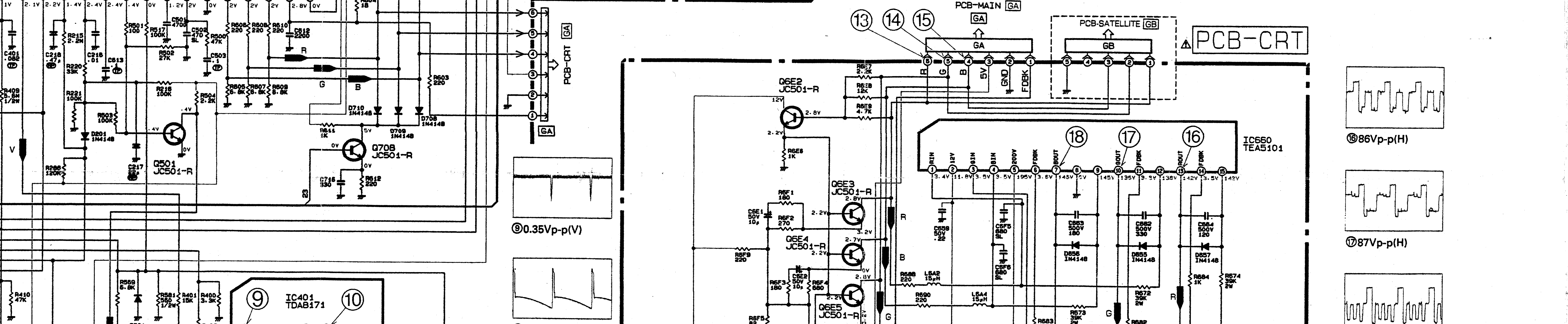
①2.0Vp-p(H)
②1.0Vp-p(H)
③1.5Vp-p(H)
④1.6Vp-p(H)
⑤1.7Vp-p(H)
⑥1.9Vp-p(V)
TO PCB-DOLBY (12V)
PCB-IDENT (CT-28AV1 GS/G-S/GDS/GD-S only)
CK
PCB-SATELLITE CA
CA
6 H-SYNC
5 V-SYNC
Q105 JA101-Q
Q107 JA101-Q
Q108 JA101-Q
TU101
AGC
TU
B3
B2
B1
BM
AFT
IF
D102
R145 180K
L105 10μH
C106 10V 220μ
Q701 2SC1740S-E
R108 10K
R107 10K
R105 5.6K
R101 330
R102 330
R103 330
C105 Z-.01
C711 82 CH
R735 82K
R736 22K
D956 μPC574
C962 47μ
C104 47μ
R199
Q102 JC501-R
L102 6.8μH
CF101 5.5MN
CF102 5.5MB
R118 150
Q702 JC501-R
Q952 2SC2236 -O.Y
R957 1K
D957 EQA02-09C /RD9.1B3
CVBS
IF
SF301
L101
SF101
IC101
SIF1
SIFSW
GND
SIF AGC
VIF
VIP
VIPAGC
TOP
RF.AGC
DET.VID
BG/L
LVL
SIF2
OFFSET
AM
SIF O/P
5V
AFC
REF
AFC SW
OSC FILT
CRR
BL
AUDIO
L104
L103 10μH
R120 56K
C100 10V 100μ
W224
*L205 1μH
*R115 270
C115 .47
*C125 47μ
R121 56K
C125 1μ
VR101 10K
R112 27K
C117 Z-.01
*R142 2.2K
*C121 4.7μ
*R199
*R111
*C120 10μF
*W127
C113 16V 2.2μ
C124 25V 10μ
*R301 2.2K
*C301 2200
*R130 100
C111 .1
AM
SIF
J252 AV2
R277 68
D251 EQA02-05C
D252 EQA02-05C
D253 EQA02-05C
R278 75
R279 75
R723 12K
L308 3.3μH
R329 4.7K
C344 470
R328 4.7K
C345 470
L309 3.3μH
R326 470
L310 3.3μH
R327 470
L311 3.3μH
C346 2200
C347 2200
AV2
BV
Q251 JC501-R
C261 16V 47μ
R272 1K
R273 470
Q252 JC501-R
R262 470
R269 10K
R271 470
R268 470
R270 10K
Q253 JC501-R
R264 470
R267 470
R266 470
Q256 JC501-R
C262 16V 47μ
R263 470
R260 1K
R265 470
IC202 TEA6415C
DET
VCC
SAT
GND
Y3
C3
SCK
Y2
SDA
C2
N.C
YTV
CTV
CO2
YO2
AV1
C260 16V 22μ
R261 10K
*R251 220
C251 16V 22μ
R252 220
C253 16V 22μ
C252 .1
C254 16V 22μ
R253 100
C255 16V 22μ
R254 100
R255 220
C256 16V 22μ
R256 100
R257 220
C257 16V 22μ
R258 100
C258 16V 22μ
R259 10K
D255
J251 AV1
R274 68
R275 100
R276 75
D254 EQA02-05C
R280 75 1/2W
D256 EQA02 -05C
D258 EQA02 -05C
D257 EQA02 -05C
R281 75
R282 75
R283 75
R325 4.7K
C340 470
C341 470
R324 4.7K
R323 470
L314 3.3μH
R322 470
L315 3.3μH
C342 2200
C343 2200
(35.36.37)
AV1
BR
C3
Y3
J253
R284 75
R285 75
J254
L316
Q105 JC501-R
R113 100K
R115 10K
R114 10K
Q103 JC501-R
*R110 10K
*R117 27K
R122 10K
*C714 12V 1μ SR
5V
IC701
S701
SERVICE
R725 10K
R717 1K
R750 100
R119 10K
C704 Z-.01
C705 56 CH
C706 56 CH
X701 12MHz
R737 220
R738 220
R739 100
R740 100
R742 220
R752 1K
R743 220
R744 6.8K
R745 27K
C707 16V 100μ
C708 Z-.01
C712 2200
C713 220
L702
IF AGC
T.V.
AFT
P1.0
P1.1
P1.2
P1.3
P1.4
P1.5
P1.6
P1.7
XTAL
B3
B2
B1
L.VL
VOL
VSYNC
HSYNC
AVDD
PLLR
PLLF
GND
KEY ADC
REMOTE
RESET
AV1
AV2
16:9
NC
MUTE
HP.INS
FLAG
ST/BY
VDD
C.LOCK
DUB
BLK
SHADOW
P5.3
P5.2
SDA
SCK
IC702 ST24C08CB1
VSS
PRE
MODE
VDD
R746 220
R747 220
C709 Z-.01
C710 16V 100μ
R754
R753
R733 1K
R719 10K
R720 10K
D704 1N4148
D703 EQA02 06D
D705 1N4148
R721 15K
Q704
D702
D701
R718 10K
R710 1K
R741 1.8K
R716 1K
R715 1K
R714 10K
R713 10K
R755 10K
R724 10K
R712 10K
R748 10K
R709 100
R708 100
R707 100
R706 100
R705 100
C715 220
R702 220
R701 220
C701 Z-.01
C702 6.3V 1000μ
R703 4.7K
R704 4.7K
L701
STBY5V
ACL
(3.9.20.21.22.23)
(8.12.19)
Q707 JC501-R
IC201 MC44031
D502 1N4148
C220 68
R602 47K
C601 3300
C502 .22μ
C614 50V .1
C215 .047
C201
R219 47K
VIDI
ACC
1
2
3
4
5
6
7
8
A
B
C
D
E

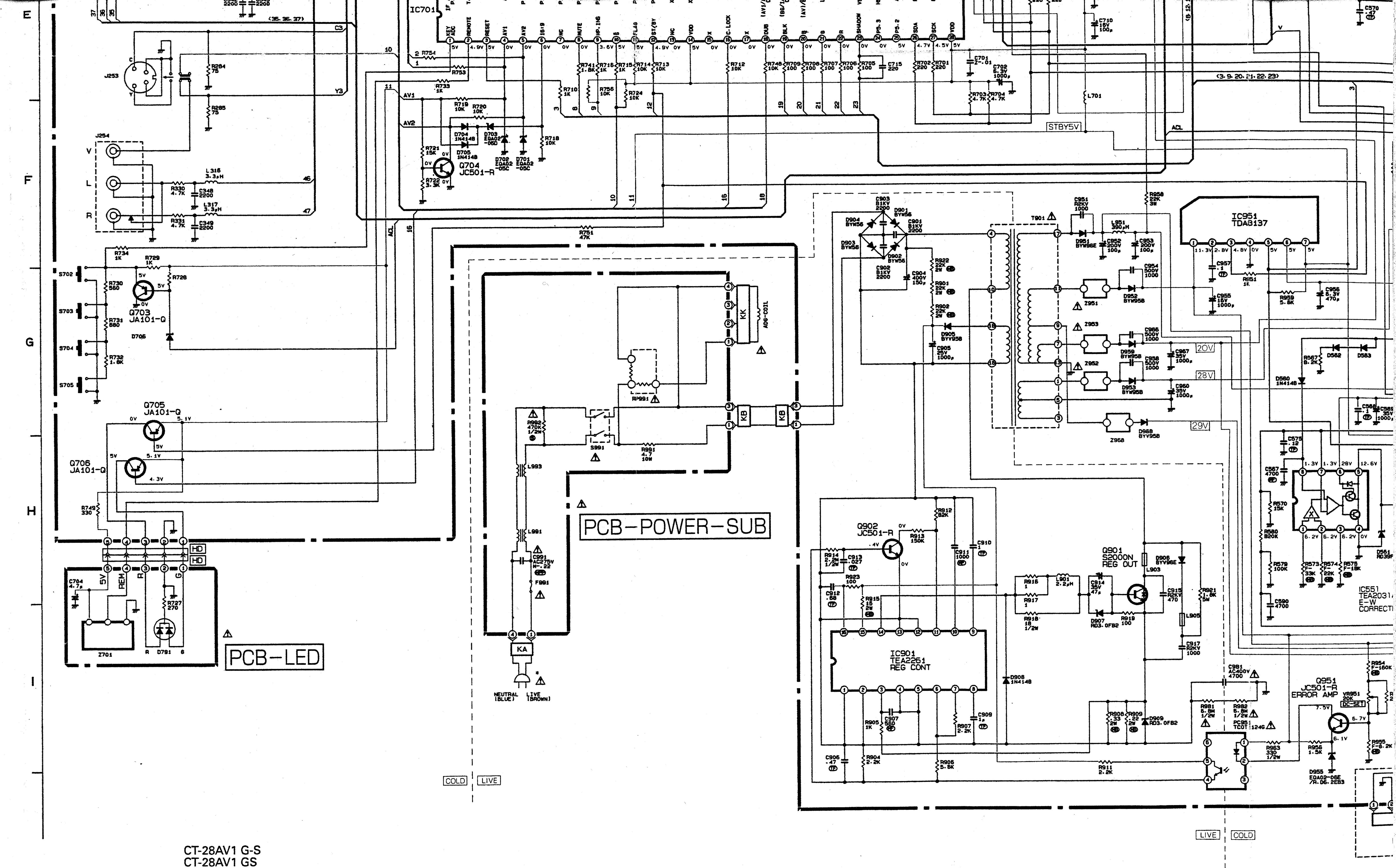

6
7
8
9
10
11
12
13
⑤1.7Vp-p(H)
⑥1.9Vp-p(V)
TO PCB-DOLBY (12V)
PCB-IDENT (CT-28AV1 GS/G-S/GDS/GD-S only)
CK
PCB-SATELLITE CA
PCB-SATELLITE HH
PCB-SOUND/DOLBY DB
PCB-SOUND/DOLBY DC
H-SYNC
V-SYNC
TVBUSD
TVBUSC
PBA
PBB
BLK
MUTE
HP-INS
L-IN
R-IN
STBY
5V
SCL
SDA
AV3L
AV3R
8V
MONO
SIF
AV1RO
AV1LO
AV1RI
AV1LI
AV2RI
AV2LI
AV2LO
AV2RO
BR
20V
DA
SP392
SP391
PCB-
PCB-AUDIO-PWR
DM
DE
IC351
TDA7263
Q302
DTC124ES
Q301
DTC124ES
Q304
JC501-R
Q305
JA101-R
D301
1N4148
J351
IC101
SF301
SF101
L101
L102
L103
L104
VR101
AUDIO
IF
Q105
JC501-R
Q103
JC501-R
CVBS/Y
CVBS
SCL
SDA
STTV
R
G
B
BLK
5V
PCB-TEXT HA
Q715
JC501-R
Q716
JC501-R
Q714
JC501-R
Q713
JC501-R
Q710
JC501-R
Q711
JC501-R
Q708
JC501-R
Q707
JC501-R
Q501
JC501-R
IC201
MC44031
IC702
ST24C08CB1
PCB-CRT GA
⑨0.35Vp-p(V)
⑬
Q6E2
JC501-R
Q6E3
JC501-R
20V
28V


9
10
11
12
13
14
PCB-SOUND/DOLBY DB
PCB-SOUND/DOLBY DC
MUTE
HP-INS
L-IN
R-IN
STBY
5V
SCL
SDA
AV3L
AV3R
8V
MONO
SIF
AV1RO
AV1LO
AV1RI
AV1LI
AV2RI
AV2LI
AV2LO
AV2RO
BR
20V
SP392
SP391
DA
PCB-MAIN
PCB-AUDIO-PWR DM
PCB-AUDIO-PWR DE
IC351 TDA7263
J351
Q302 DTC124ES
Q301 DTC124ES
Q304 JC501-R
20V
28V
Q715 JC501-R
Q716 JC501-R
Q714 JC501-R
Q713 JC501-R
Q710 JC501-R
Q711 JC501-R
CVBS/Y
CVBS
SCL
SDA
STTV
R
G
B
BLK
5V
PCB-TEXT HA
⑦2.0Vp-p(V)
⑧0.62Vp-p(H)
⑬0.86Vp-p(H)
⑭0.92Vp-p(H)
⑮1.3Vp-p(H)

*DIFFERENCE TABLE

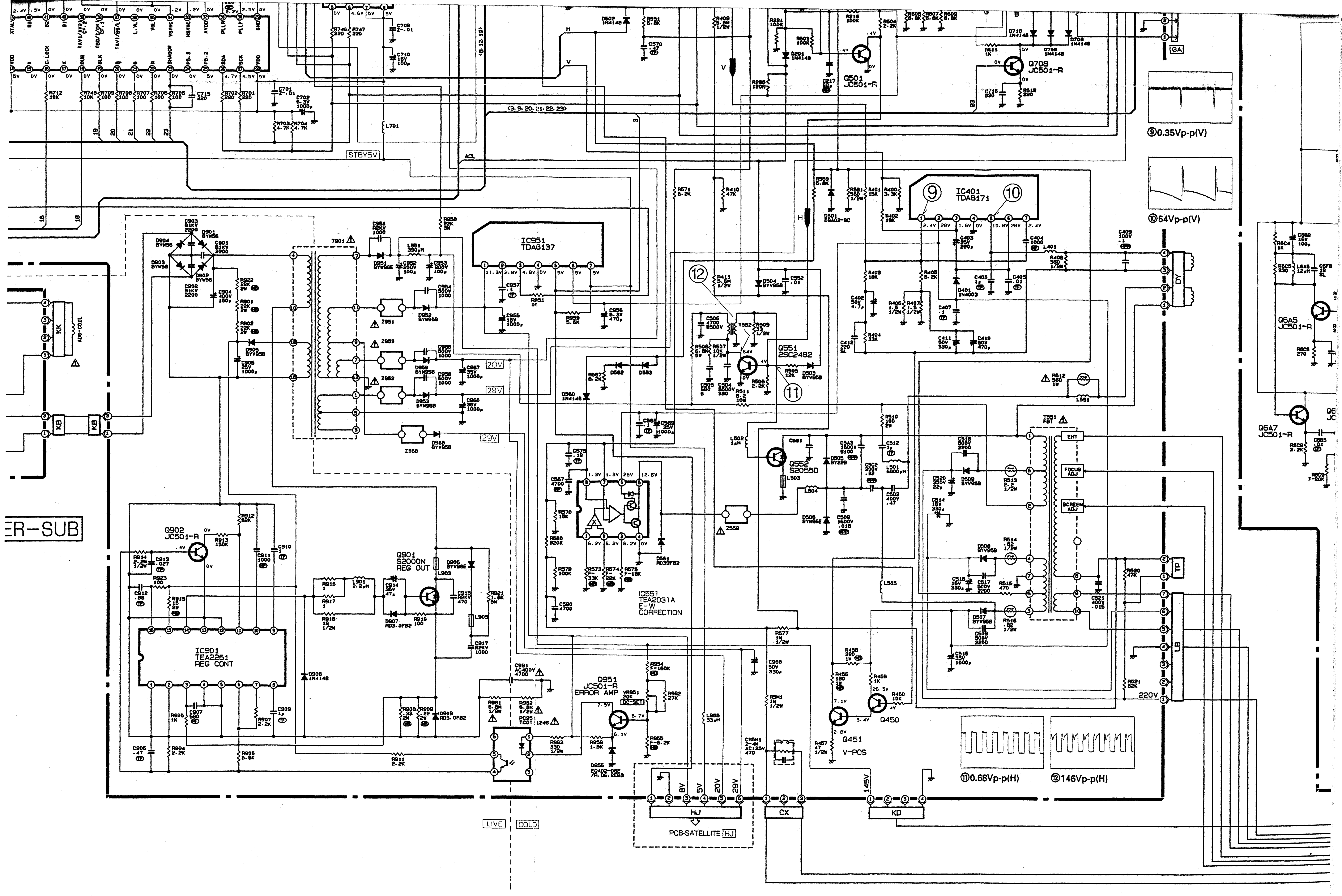
	GS, G-S, GDS, GD-S	S-S, SD-S	ED-S
C104	○	-	○
C120	-	○	-
C121	-	○	-
C126	-	-	○
C714	-	○	-
L205	-	-	○
Q103	-	○	-
R110	-	○	-
R111	6.8K	2.2K	6.8K
R117	-	○	-
R122	-	○	-
R130	-	○	○
R142	-	○	-
R199	100	1K	100
R251	180	180	220
R301	-	○	-
R740	-	○	-
W127	○	-	○
W224	○	○	-

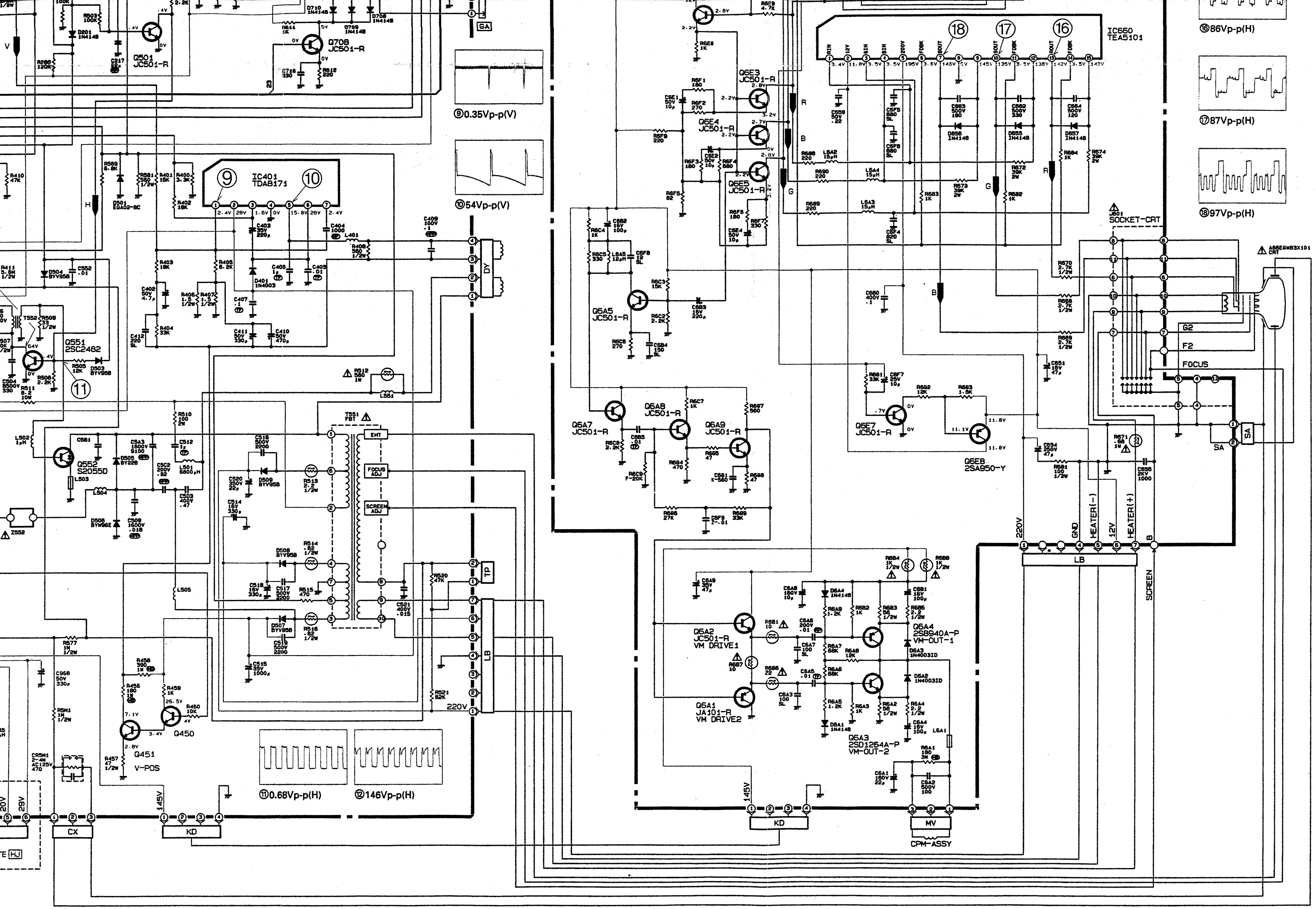

PCB-CRT GA
PCB-MAIN GA
PCB-SATELLITE GB
PCB-CRT
Q501 JC501-R
Q708 JC501-R
Q6E2 JC501-R
Q6E3 JC501-R
Q6E4 JC501-R
Q6E5 JC501-R
IC660 TEA5101
IC401 TDA8171
⑨0.35Vp-p(V)
⑯86Vp-p(H)
⑰87Vp-p(H)


E
F
G
H
I
IC701
KEY ADC
REMOTE
RESET
AV1
AV2
MUTE
FLAG
ST/BY
VDD
C.LOCK
SHADOW
SDA
SCK
J253
J254
V
L
R
S702
S703
S704
S705
Q703
JA101-Q
Q704
JC501-R
Q705
JA101-Q
Q706
JA101-Q
D706
STBY5V
ACL
HD
5V
REM
Z701
D791
PCB-LED
PCB-POWER-SUB
KK
ADG-COIL
KB
KA
RP991
S991
L993
L991
F991
NEUTRAL (BLUE)
LIVE (BROWN)
COLD
LIVE
T901
IC951
TDA8137
20V
28V
29V
Q902
JC501-R
Q901
S2000N
REG OUT
IC901
TEA2261
REG CONT
Q951
JC501-R
ERROR AMP
VR951
DC-SET
PC951
IC551
TEA2031
E-W
CORRECTI

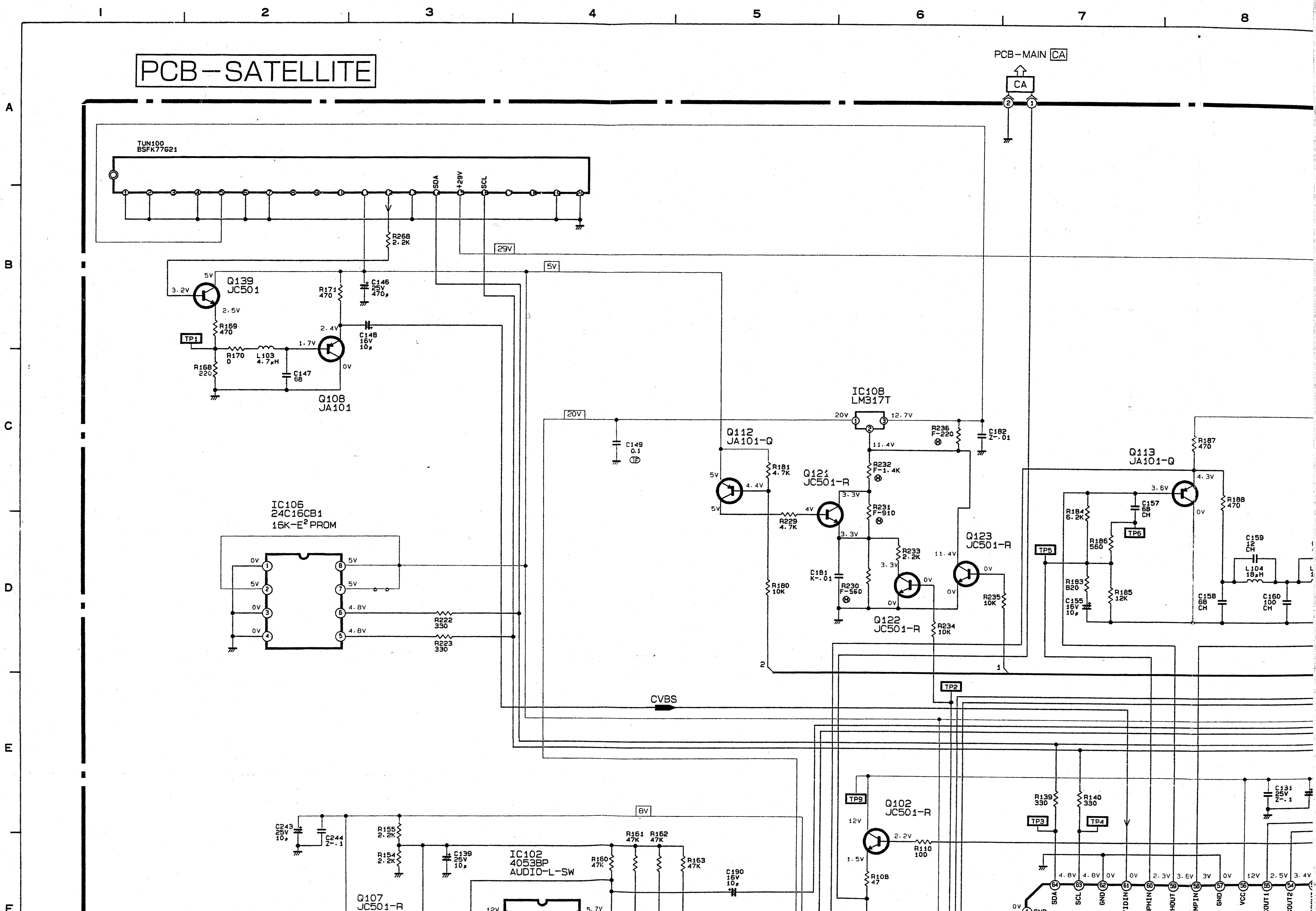
②

CT-28AV1 G-S
CT-28AV1 GS
CT-28AV1 GD-S
CT-28AV1 GDS
CT-28AV1 SD-S
CT-28AV1 S-S
CT-28AV1 ED-S


ER-SUB
IC951
TDA8137
IC401
TDA8171
IC901
TEA2261
REG CONT
IC551
TEA2031A
E-W
CORRECTION
Q902
JC501-R
Q901
S2000N
REG OUT
Q951
JC501-R
ERROR AMP
VR951
DC-SET
PC951
TCDT 1124G
Q551
2SC2482
Q552
S2055D
Q501
JC501-R
Q708
JC501-R
Q450
Q451
V-POS
Q6A5
JC501-R
Q6A7
JC501-R
T901
T552
T551
FBT
EHT
FOCUS
ADJ
SCREEN
ADJ
DY
LB
TP
GA
KK
ADS-COIL
KB
HJ
CX
KD
PCB-SATELLITE HJ
LIVE
COLD
STBY5V
ACL
20V
28V
29V
220V
8V
5V
145V
Z951
Z952
Z953
Z958
Z552
⑨0.35Vp-p(V)
⑩54Vp-p(V)
⑪0.68Vp-p(H)
⑫146Vp-p(H)
⑨
⑩
⑪
⑫
H
V


IC401
TDA8171
IC660
TEA5101
T551 FBT
DY
TP
LB
KD
CX
MV
CPM-ASSY
SA
SOCKET-CRT
CRT
EHT
FOCUS ADJ
SCREEN ADJ
FOCUS
G2
F2
SCREEN
HEATER(-)
HEATER(+)
GND
12V
220V
145V
Q501 JC501-R
Q708 JC501-R
Q551 2SC2482
Q552 S2055D
Q450
Q451 V-POS
Q6E3 JC501-R
Q6E4 JC501-R
Q6E5 JC501-R
Q6A5 JC501-R
Q6A7 JC501-R
Q6A8 JC501-R
Q6A9 JC501-R
Q6E7 JC501-R
Q6E8 2SA950-Y
Q6A2 JC501-R VM DRIVE1
Q6A1 JA101-R VM DRIVE2
Q6A4 2SB940A-P VM-OUT-1
Q6A3 2SD1264A-P VM-OUT-2
⑨0.35Vp-p(V)
⑩54Vp-p(V)
⑪0.68Vp-p(H)
⑫146Vp-p(H)
⑯86Vp-p(H)
⑰87Vp-p(H)
⑱97Vp-p(H)
Z552
GA
HJ

PCB–SATELLITE


1
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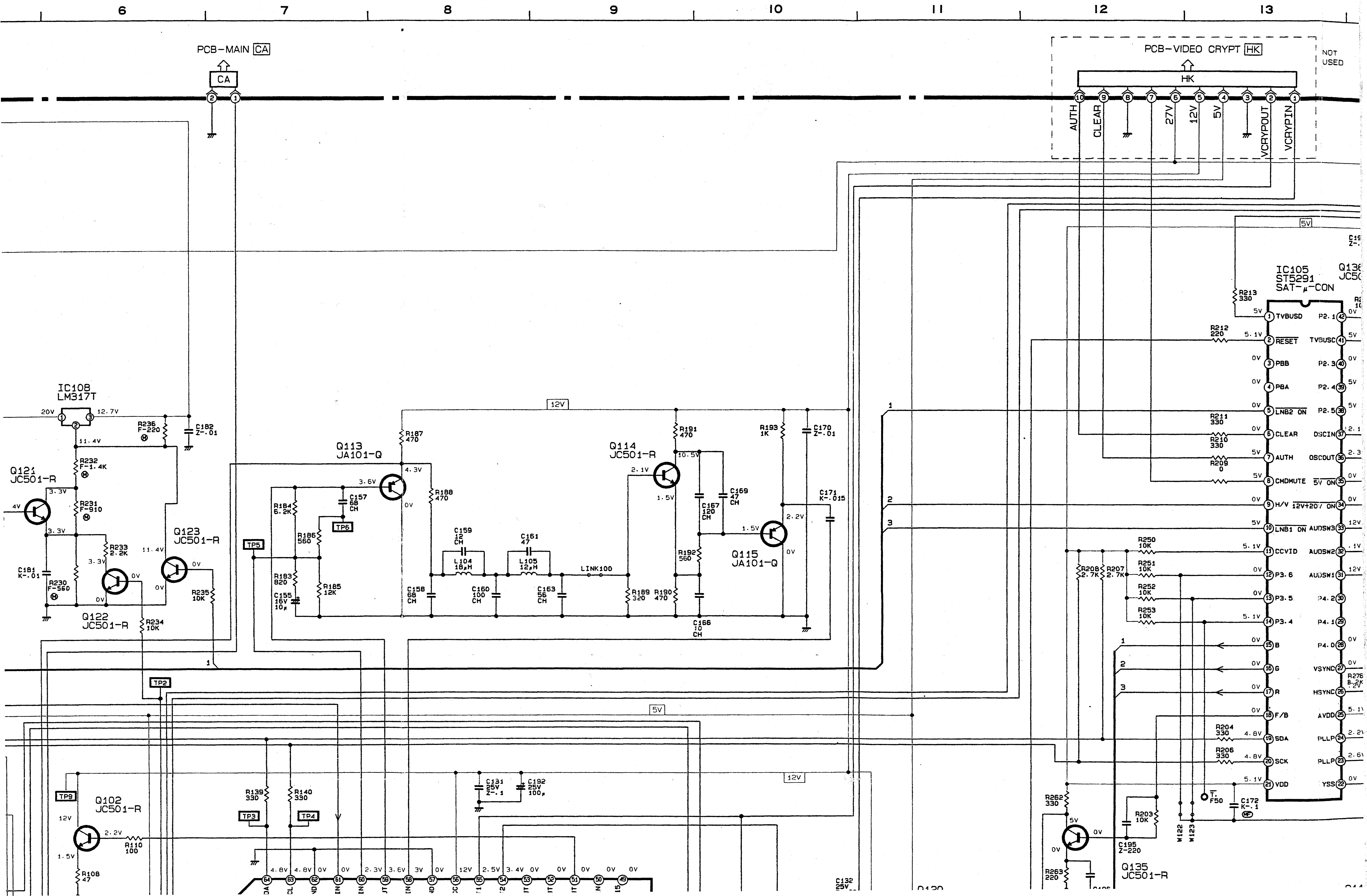
7
8
A
B
C
D
E
F
PCB–MAIN CA
CA
2
1
TUN100
BSFK77G21
SDA
+29V
SCL
R268
2.2K
29V
5V
Q139
JC501
5V
3.2V
2.5V
R171
470
C146
25V
470μ
R169
470
TP1
2.4V
C148
16V
10μ
1.7V
R170
0
L103
4.7μH
C147
68
R168
220
0V
Q108
JA101
IC106
24C16CB1
16K-E²PROM
0V
5V
0V
0V
5V
5V
4.8V
4.8V
R222
330
R223
330
20V
C149
0.1
IC108
LM317T
20V
12.7V
R236
F-220
C182
Z-.01
11.4V
Q112
JA101-Q
R181
4.7K
5V
4.4V
5V
Q121
JC501-R
R232
F-1.4K
3.3V
4V
R229
4.7K
R231
F-810
3.3V
R233
2.2K
3.3V
11.4V
Q123
JC501-R
0V
0V
C181
K-.01
R230
F-560
R180
10K
0V
Q122
JC501-R
R234
10K
R235
10K
2
1
TP2
CVBS
Q113
JA101-Q
R187
470
4.3V
3.6V
0V
R188
470
R184
6.2K
C157
68
CH
TP6
R186
560
TP5
R183
820
C155
16V
10μ
R185
12K
C159
12
CH
L104
18μH
C158
68
CH
C160
100
CH
8V
C243
25V
10μ
C244
Z-.1
R155
2.2K
R154
2.2K
C139
25V
10μ
IC102
4053BP
AUDIO-L-SW
R161
47K
R162
47K
R160
47K
R163
47K
C190
16V
10μ
Q107
JC501-R
12V
5.7V
TP9
Q102
JC501-R
12V
2.2V
R110
100
1.5V
R108
47
R139
330
R140
330
TP3
TP4
C131
25V
Z-.1
4.8V
4.8V
0V
0V
2.3V
3.6V
3V
0V
12V
2.5V
3.4V
64
63
62
61
60
59
58
57
56
55
54
SDA
SCL
GND
VIDIN
HOUT
GND
VCC
0V


6
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8
9
10
11
12
13
PCB-MAIN CA
CA
PCB-VIDEO CRYPT HK
NOT USED
HK
AUTH
CLEAR
27V
12V
5V
VCRYPOUT
VCRYPIN
IC108
LM317T
20V
12.7V
11.4V
R236 F-220
C182 Z-.01
R232 F-1.4K
R231 F-810
R233 2.2K
R230 F-560
C181 K-.01
Q121 JC501-R
Q122 JC501-R
Q123 JC501-R
R235 10K
R234 10K
TP2
TP5
TP6
12V
Q113 JA101-Q
R187 470
R188 470
R184 6.2K
R186 560
R183 820
R185 12K
C155 16V 10μ
C157 68 CH
C159 12 CH
L104 18μH
C161 47
L105 12μH
C158 68 CH
C160 100 CH
C163 56 CH
LINK100
Q114 JC501-R
R191 470
C169 47 CH
C167 120 CH
R192 560
R189 320
R190 470
C166 10 CH
Q115 JA101-Q
R193 1K
C170 Z-.01
C171 K-.015
5V
IC105
ST5291
SAT-μ-CON
Q136 JC5
R213 330
R212 220
R211 330
R210 330
R209 0
R250 10K
R251 10K
R252 10K
R253 10K
R208 2.7K
R207 2.7K
R204 330
R206 330
1 TVBUSD
2 RESET
3 PBB
4 PBA
5 LNB2 ON
6 CLEAR
7 AUTH
8 CMDMUTE
9 H/V
10 LNB1 ON
11 CCVID
12 P3.6
13 P3.5
14 P3.4
15 B
16 G
17 R
18 F/B
19 SDA
20 SCK
21 VDD
42 P2.1
41 TVBUSC
40 P2.3
39 P2.4
38 P2.5
37 DSCIN
36 OSCOUT
35 5V ON
34 12V+20V ON
33 AUDSW3
32 AUDSW2
31 AUDSW1
30 P4.2
29 P4.1
28 P4.0
27 VSYNC
26 HSYNC
25 AVDD
24 PLLP
23 PLLP
22 YSS
R276 8.2K
F50
C172 K-.1
W122
W123
R262 330
R203 10K
C195 Z-220
Q135 JC501-R
R263 220
Q102 JC501-R
TP9
R110 100
R108 47
R139 330
R140 330
TP3
TP4
C131 25V Z-.1
C132 25V 100μ
C132 25V
Q130
64
63
62
61
60
59
58
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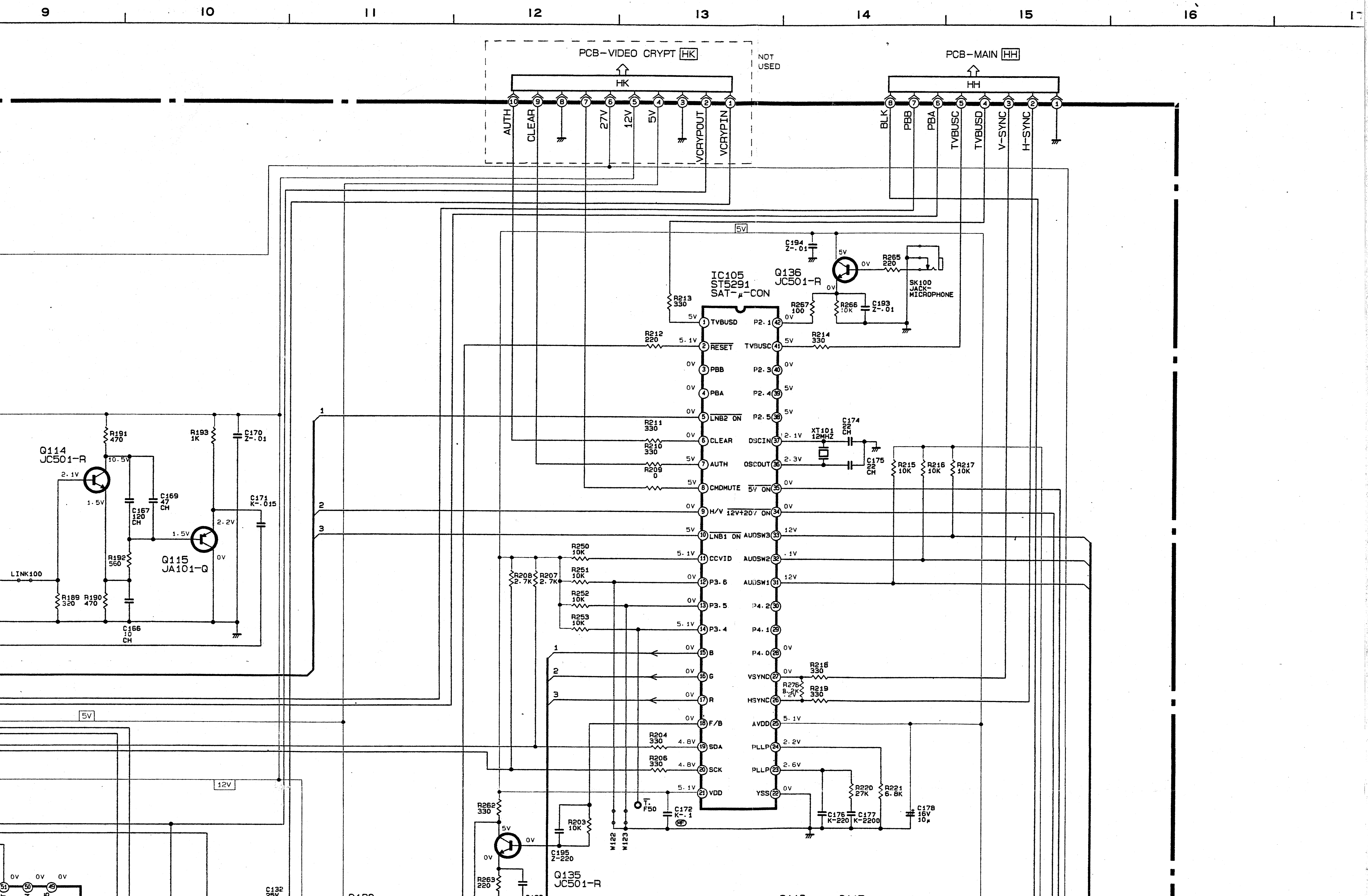
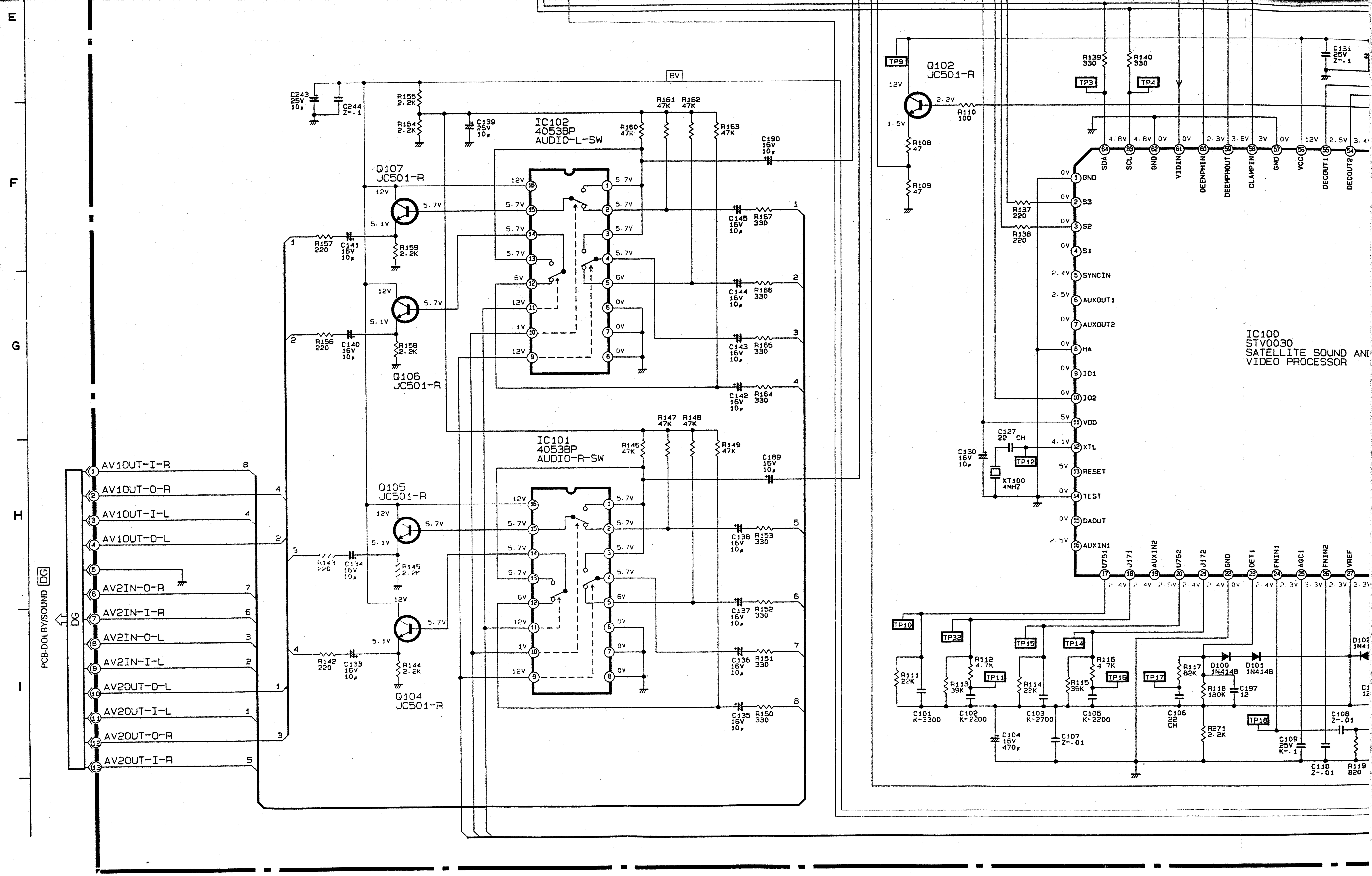
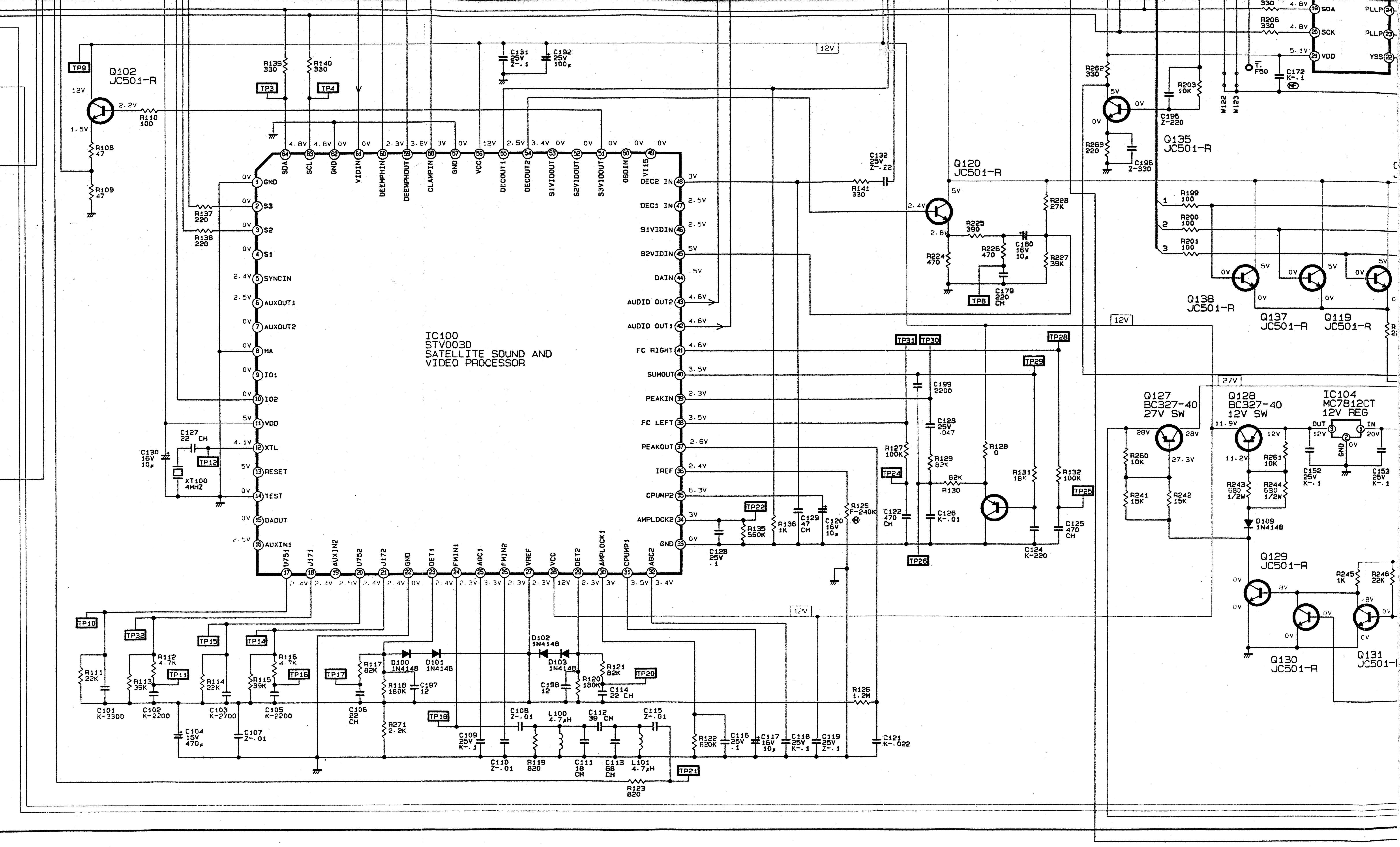
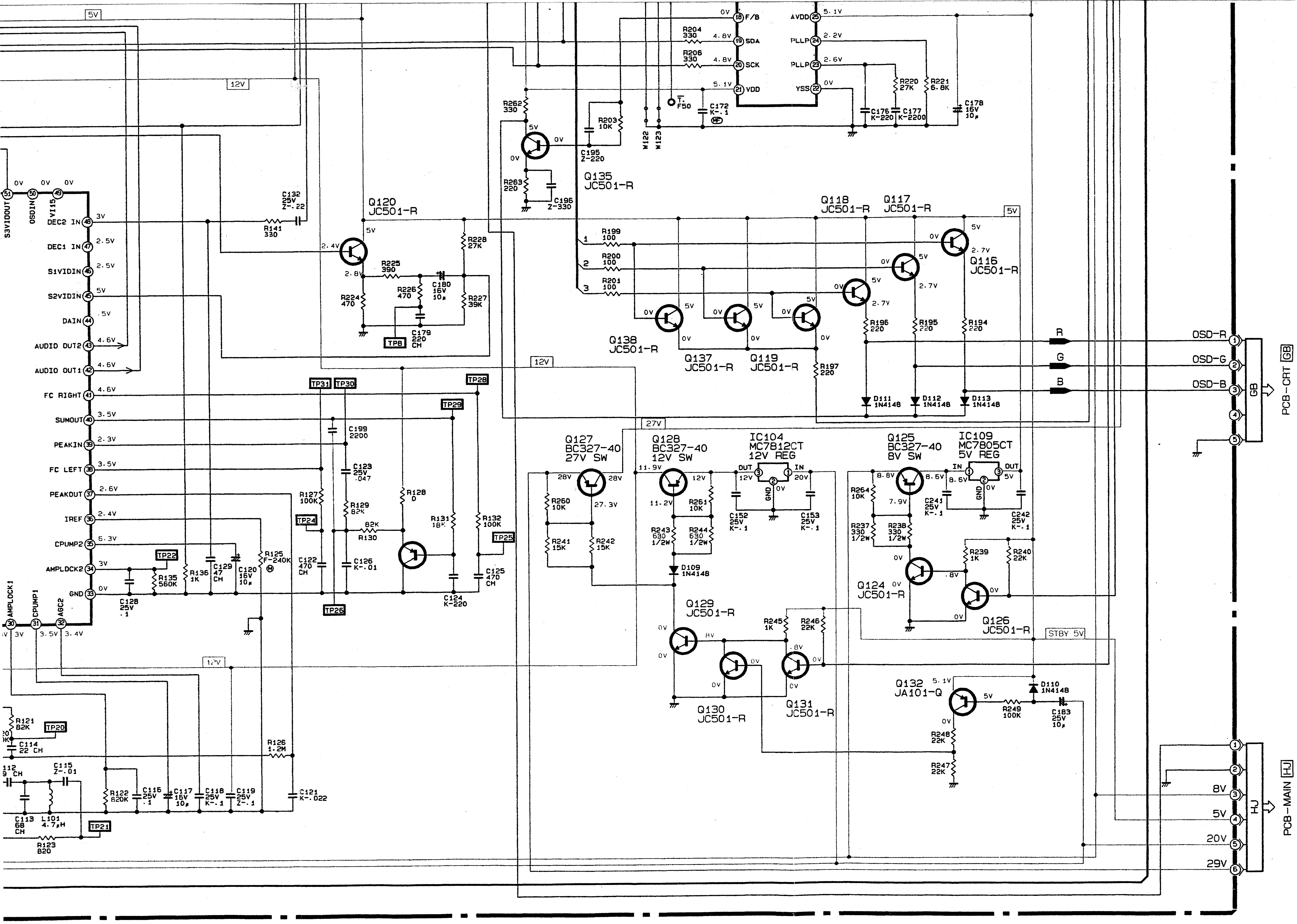
55
54
53
52
51
50
49


9
10
11
12
13
14
15
16
PCB-VIDEO CRYPT HK
NOT USED
HK
AUTH
CLEAR
27V
12V
5V
VCRYPOUT
VCRYPIN
PCB-MAIN HH
HH
BLK
PBB
PBA
TVBUSC
TVBUSD
V-SYNC
H-SYNC
5V
C194 Z-.01
Q136 JC501-R
R265 220
SK100 JACK-MICROPHONE
IC105 ST5291 SAT-µ-CON
R213 330
R267 100
R266 10K
C193 Z-.01
R212 220
R214 330
TVBUSD
RESET
PBB
PBA
LNB2 ON
CLEAR
AUTH
CMDMUTE
H/V
LNB1 ON
CCVID
P3.6
P3.5
P3.4
B
G
R
F/B
SDA
SCK
VDD
P2.1
TVBUSC
P2.3
P2.4
P2.5
OSCIN
OSCOUT
5V ON
12V+20V ON
AUDSW3
AUDSW2
AUDSW1
P4.2
P4.1
P4.0
VSYNC
HSYNC
AVDD
PLLP
PLLP
YSS
R211 330
R210 330
R209 0
XT101 12MHZ
C174 22 CH
C175 22 CH
R215 10K
R216 10K
R217 10K
R250 10K
R251 10K
R252 10K
R253 10K
R208 2.7K
R207 2.7K
R218 330
R276 8.2K
R219 330
R204 330
R206 330
R220 27K
R221 6.8K
C176 K-220
C177 K-2200
C178 16V 10µ
R203 10K
T. F50
C172 K-.1 MF
W122
W123
R262 330
R263 220
C195 Z-220
Q135 JC501-R
Q114 JC501-R
R191 470
R193 1K
C170 Z-.01
C169 47 CH
C167 120 CH
C171 K-.015
Q115 JA101-Q
R192 560
LINK100
R189 320
R190 470
C166 10 CH
C132 25V
12V
0V
5V
5.1V
2.1V
2.2V
2.3V
2.6V
4.8V
1.5V
10.5V
12V
.1V
1
2
3

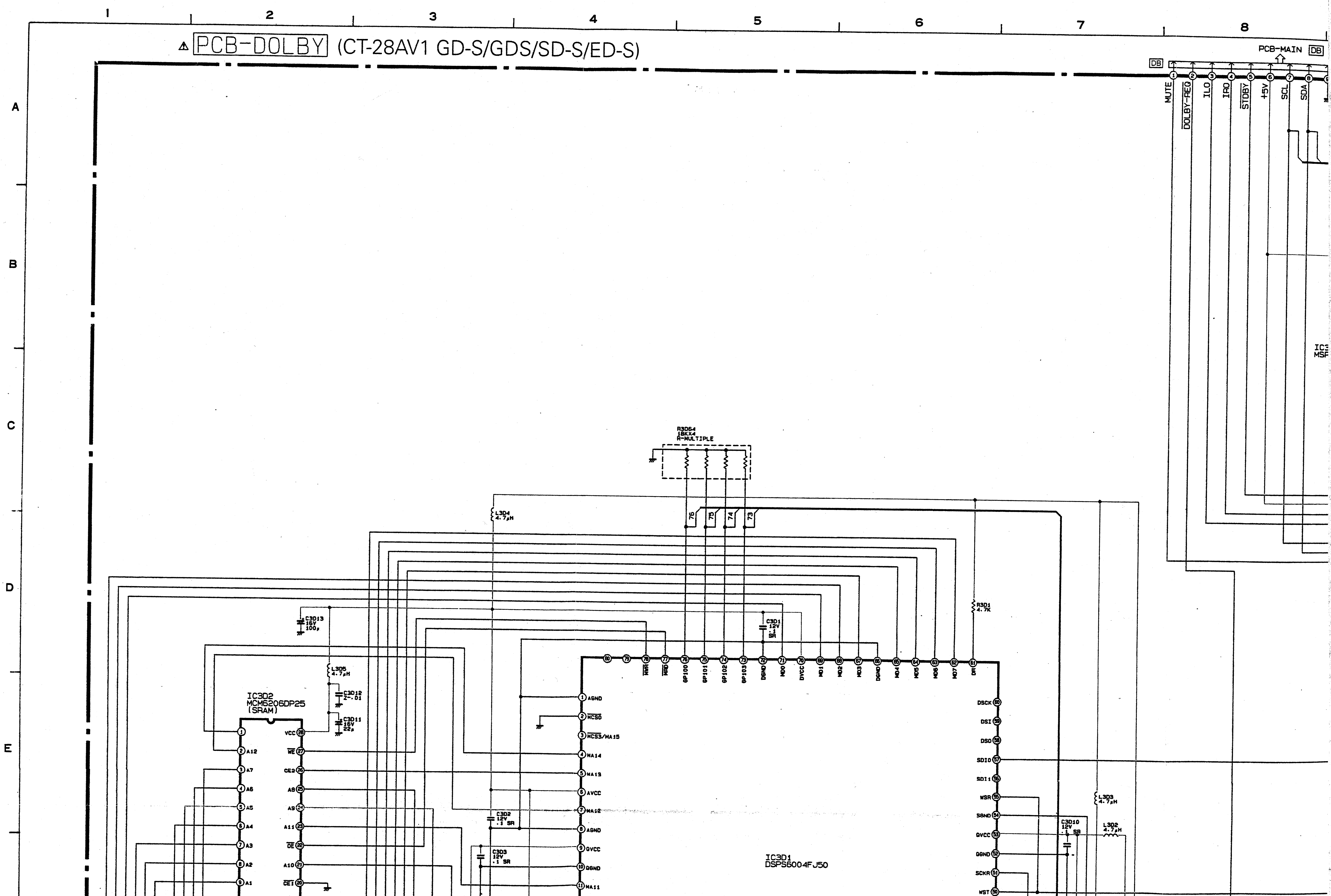

E
F
G
H
I
IC102
4053BP
AUDIO-L-SW
IC101
4053BP
AUDIO-R-SW
IC100
STV0030
SATELLITE SOUND AND
VIDEO PROCESSOR
Q107
JC501-R
Q106
JC501-R
Q105
JC501-R
Q104
JC501-R
Q102
JC501-R
8V
C243 25V 10µ
C244 Z-.1
R155 2.2K
R154 2.2K
C139 25V 10µ
R157 220
C141 16V 10µ
R159 2.2K
R156 220
C140 16V 10µ
R158 2.2K
R141 220
C134 16V 10µ
R145 2.2K
R142 220
C133 16V 10µ
R144 2.2K
R160 47K
R161 47K
R162 47K
R163 47K
C190 16V 10µ
C145 16V 10µ
R167 330
C144 16V 10µ
R166 330
C143 16V 10µ
R165 330
C142 16V 10µ
R164 330
R146 47K
R147 47K
R148 47K
R149 47K
C189 16V 10µ
C138 16V 10µ
R153 330
C137 16V 10µ
R152 330
C136 16V 10µ
R151 330
C135 16V 10µ
R150 330
PCB-DOLBY/SOUND DG
DG
AV1OUT-I-R
AV1OUT-O-R
AV1OUT-I-L
AV1OUT-O-L
AV2IN-O-R
AV2IN-I-R
AV2IN-O-L
AV2IN-I-L
AV2OUT-O-L
AV2OUT-I-L
AV2OUT-O-R
AV2OUT-I-R
TP9
TP3
TP4
TP12
TP10
TP32
TP15
TP14
TP11
TP16
TP17
TP18
R139 330
R140 330
C131 25V Z-.1
R110 100
R108 47
R109 47
R137 220
R138 220
C127 22 CH
C130 16V 10µ
XT100 4MHZ
SDA
SCL
GND
VIDIN
DEEMPHIN
DEEMPHOUT
CLAMPIN
GND
VCC
DECOUT1
DECOUT2
GND
S3
S2
S1
SYNCIN
AUXOUT1
AUXOUT2
HA
IO1
IO2
VDD
XTL
RESET
TEST
DAOUT
AUXIN1
U751
J171
AUXIN2
U752
J172
GND
DET1
FMIN1
AGC1
FMIN2
VREF
R111 22K
C101 K-3300
R112 4.7K
R113 39K
C102 K-2200
C104 16V 470µ
R114 22K
C103 K-2700
C107 Z-.01
R116 4.7K
R115 39K
C105 K-2200
C106 22 CH
R117 82K
R118 180K
C197 12
R271 2.2K
D100 1N4148
D101 1N4148
D102 1N41
C108 Z-.01
C109 25V K-.1
C110 Z-.01
R119 820
12V
5.7V
5.1V
6V
1V
0V
2.2V
1.5V
4.8V
2.3V
3.6V
3V
2.5V
3.4V
2.4V
4.1V
5V
3.3V

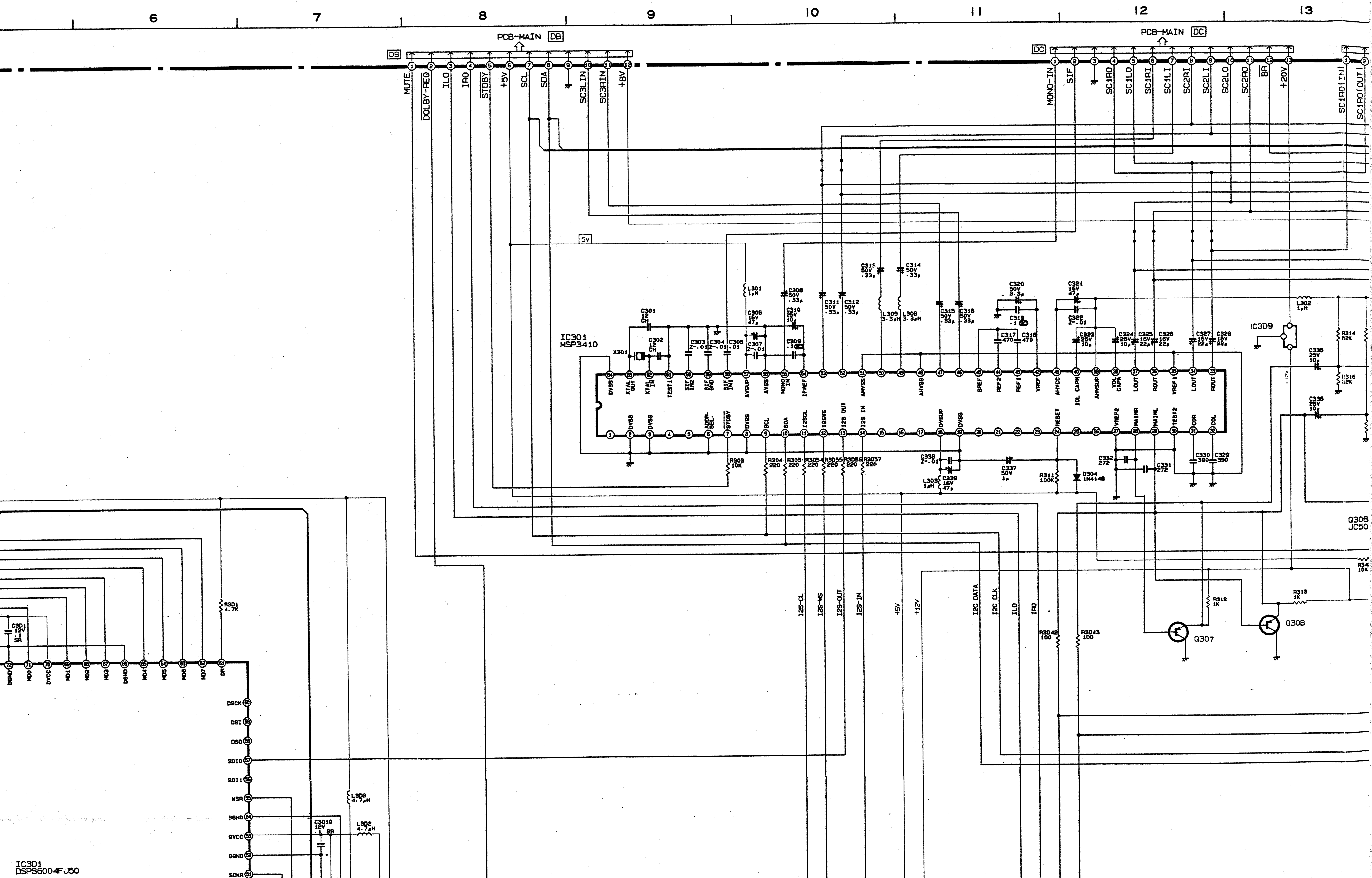

IC100
STV0030
SATELLITE SOUND AND
VIDEO PROCESSOR
Q102
JC501-R
Q120
JC501-R
Q135
JC501-R
Q138
JC501-R
Q137
JC501-R
Q119
JC501-R
Q127
BC327-40
27V SW
Q128
BC327-40
12V SW
IC104
MC7812CT
12V REG
OUT
IN
GND
Q129
JC501-R
Q130
JC501-R
Q131
JC501-R
1 GND
2 S3
3 S2
4 S1
5 SYNCIN
6 AUXOUT1
7 AUXOUT2
8 HA
9 IO1
10 IO2
11 VDD
12 XTL
13 RESET
14 TEST
15 DADUT
16 AUXIN1
17 U751
18 J171
19 AUXIN2
20 U752
21 J172
22 GND
23 DET1
24 FMIN1
25 AGC1
26 FMIN2
27 VREF
28 VCC
29 DET2
30 AMPLDCK1
31 CPUMP1
32 AGC2
33 GND
34 AMPLDCK2
35 CPUMP2
36 IREF
37 PEAKOUT
38 FC LEFT
39 PEAKIN
40 SUMOUT
41 FC RIGHT
42 AUDIO OUT1
43 AUDIO OUT2
44 DAIN
45 S2VIDIN
46 S1VIDIN
47 DEC1 IN
48 DEC2 IN
49 V115
50 OSDIN
51 S3VIDOUT
52 S2VIDOUT
53 S1VIDOUT
54 DECOUT2
55 DECOUT1
56 VCC
57 GND
58 CLAMPIN
59 DEEMPHOUT
60 DEEMPHIN
61 VIDIN
62 GND
63 SCL
64 SDA
19 SDA
20 SCK
21 VDD
22 YSS
23 PLLP
24 PLLP
TP3
TP4
TP8
TP9
TP10
TP11
TP12
TP14
TP15
TP16
TP17
TP18
TP20
TP21
TP22
TP24
TP25
TP26
TP28
TP29
TP30
TP31
TP32
12V
27V
R108 47
R109 47
R110 100
R137 220
R138 220
R139 330
R140 330
C131 25V Z-.1
C192 25V 100μ
C127 22 CH
C130 16V 10μ
XT100 4MHZ
R141 330
C132 25V Z-.22
R224 470
R225 390
R226 470
R227 39K
R228 27K
C180 16V 10μ
C179 220 CH
R262 330
R263 220
C196 Z-330
R203 10K
C195 Z-220
R205 330
R206 330
C172 K-.1
F50
W122
W123
R199 100
R200 100
R201 100
R260 10K
R241 15K
R242 15K
R261 10K
R243 630 1/2W
R244 630 1/2W
D109 1N4148
C152 25V K-.1
C153 25V K-.1
R245 1K
R246 22K
C199 2200
C123 25V .047
R127 100K
R129 82K
R130 82K
R128 0
C122 470 CH
C126 K-.01
R131 18K
R132 100K
C124 K-220
C125 470 CH
R125 F-240K
C120 16V 10μ
C129 47 CH
R136 1K
R135 560K
C128 25V .1
R126 1.2M
C121 K-.022
R111 22K
C101 K-3300
R112 4.7K
R113 39K
C102 K-2200
R114 22K
C103 K-2700
C104 16V 470μ
C107 Z-.01
R115 39K
R116 4.7K
C105 K-2200
C106 22 CH
R117 82K
D100 1N4148
D101 1N4148
R118 180K
C197 12
R271 2.2K
D102 1N4148
D103 1N4148
C198 12
R120 180K
R121 82K
C114 22 CH
C108 Z-.01
C109 25V K-.1
C110 Z-.01
L100 4.7μH
R119 820
C111 18 CH
C112 39 CH
C113 68 CH
C115 Z-.01
L101 4.7μH
R123 820
R122 820K
C116 25V .1
C117 16V 10μ
C118 25V K-.1
C119 25V Z-.1

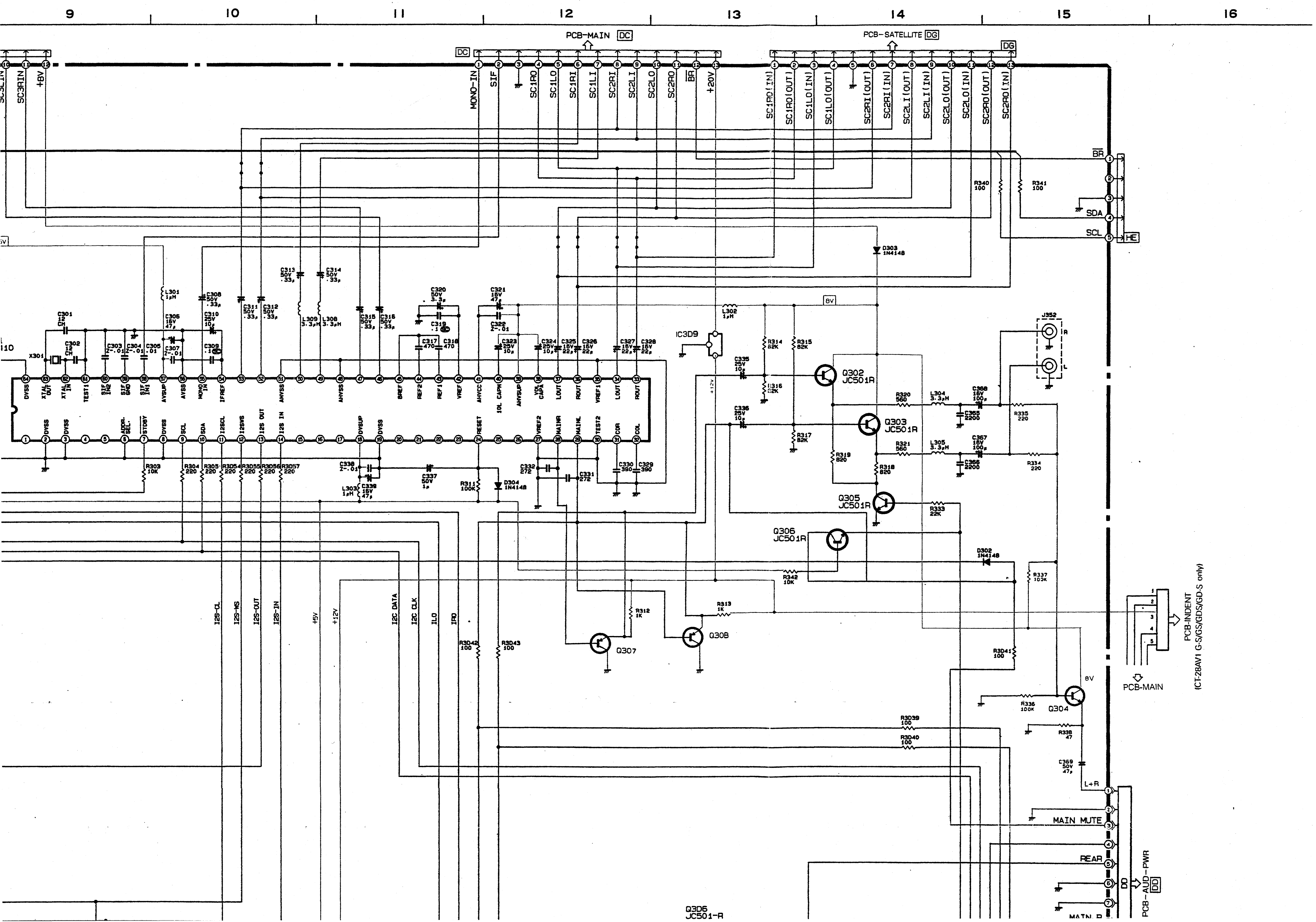

5V
12V
F/B
SDA
SCK
VDD
AVDD
PLLP
PLLP
YSS
R204 330
R206 330
R220 27K
R221 6.8K
C176 K-220
C177 K-2200
C178 16V 10μ
C172 K-.1
T. F50
W122
W123
R262 330
R203 10K
C195 Z-220
R263 220
C196 Z-330
Q135 JC501-R
S3VIDOUT
OSDIN
V115
DEC2 IN
DEC1 IN
S1VIDIN
S2VIDIN
DAIN
AUDIO OUT2
AUDIO OUT1
FC RIGHT
SUMOUT
PEAKIN
FC LEFT
PEAKOUT
IREF
CPUMP2
AMPLOCK2
GND
AMPLOCK1
CPUMP1
AGC2
C132 25V Z-.22
R141 330
Q120 JC501-R
R225 390
R226 470
C180 16V 10μ
R228 27K
R227 39K
R224 470
C179 220 CH
TP8
TP31
TP30
TP28
TP29
C199 2200
C123 25V .047
R127 100K
R129 82K
R130 82K
R128 0
R131 18K
R132 100K
TP24
TP25
C122 470 CH
C126 K-.01
C124 K-220
C125 470 CH
TP26
TP22
R135 560K
R136 1K
C129 47 CH
C120 16V 10μ
R125 F-240K
C128 25V .1
R121 82K
TP20
C114 22 CH
C115 Z-.01
R126 1.2M
C113 68 CH
L101 4.7μH
R122 820K
C116 25V .1
C117 16V 10μ
C118 25V K-.1
C119 25V Z-.1
C121 K-.022
TP21
R123 820
Q118 JC501-R
Q117 JC501-R
Q116 JC501-R
R199 100
R200 100
R201 100
Q138 JC501-R
Q137 JC501-R
Q119 JC501-R
R196 220
R195 220
R194 220
R197 220
D111 1N4148
D112 1N4148
D113 1N4148
R
G
B
OSD-R
OSD-G
OSD-B
GB
PCB-CRT GB
27V
Q127 BC327-40 27V SW
Q128 BC327-40 12V SW
IC104 MC7812CT 12V REG
Q125 BC327-40 8V SW
IC109 MC7805CT 5V REG
OUT
IN
GND
R260 10K
R241 15K
R242 15K
R261 10K
R243 630 1/2W
R244 630 1/2W
C152 25V K-.1
C153 25V K-.1
D109 1N4148
R264 10K
R237 330 1/2W
R238 330 1/2W
C241 25V K-.1
C242 25V K-.1
R239 1K
R240 22K
Q124 JC501-R
Q126 JC501-R
STBY 5V
Q129 JC501-R
R245 1K
R246 22K
Q130 JC501-R
Q131 JC501-R
Q132 JA101-Q
R249 100K
D110 1N4148
C183 25V 10μ
R248 22K
R247 22K
HJ
PCB-MAIN HJ
8V
5V
20V
29V

CT-28AV1 G-S
CT-28AV1 GS
CT-28AV1 GDS
CT-28AV1 S-S
CT-28AV1 ED-S
CT-28AV1 GD-S
CT-28AV1 SD-S

⚠ PCB-DOLBY (CT-28AV1 GD-S/GDS/SD-S/ED-S)


1
2
3
4
5
6
7
8
A
B
C
D
E
PCB-MAIN
DB
MUTE
DOLBY-REG
ILO
IRO
STDBY
+5V
SCL
SDA
R3D64
10KX4
R-MULTIPLE
L3D4
4.7μH
R3D1
4.7K
C3D1
12V
.1
SR
C3D13
16V
100μ
L3D5
4.7μH
C3D12
Z-.01
C3D11
16V
22μ
IC3D2
MCM6206DP25
(SRAM)
VCC
WE
CE2
A8
A9
A11
OE
A10
CE1
A12
A7
A6
A5
A4
A3
A2
A1
C3D2
12V
.1 SR
C3D3
12V
.1 SR
AGND
NCS0
NCS3/MA15
MA14
MA13
AVCC
MA12
AGND
QVCC
DGND
MA11
MWR
MRD
GP100
GP101
GP102
GP103
DGND
MD0
DVCC
MD1
MD2
MD3
DGND
MD4
MD5
MD6
MD7
DR
DSCK
DSI
DSO
SDI0
SDI1
WSR
SGND
QVCC
QGND
SCKR
WST
IC3D1
DSPS6004FJ50
L3D3
4.7μH
C3D10
12V
.1 SR
L3D2
4.7μH
IC3
MSP


6
7
8
9
10
11
12
13
PCB-MAIN DB
DB
MUTE
DOLBY-REG
ILO
IRO
STDBY
+5V
SCL
SDA
SC3LIN
SC3RIN
+8V
PCB-MAIN DC
DC
MONO-IN
SIF
SC1RO
SC1LO
SC1RI
SC1LI
SC2RI
SC2LI
SC2LO
SC2RO
BR
+20V
SC1RO(IN)
SC1RO(OUT)
5V
IC301
MSP3410
X301
C301 12 CH
C302 12 CH
C303 Z-.01
C304 Z-.01
C305 .01
L301 1μH
C306 16V 47μ
C307 Z-.01
C308 50V .33μ
C310 25V 10μ
C309 .1 SC
C311 50V .33μ
C312 50V .33μ
C313 50V .33μ
C314 50V .33μ
L309 3.3μH
L308 3.3μH
C315 50V .33μ
C316 50V .33μ
C320 50V 3.3μ
C319 .1 SC
C317 470
C318 470
C321 16V 47μ
C322 Z-.01
C323 25V 10μ
C324 25V 10μ
C325 16V 22μ
C326 16V 22μ
C327 16V 22μ
C328 16V 22μ
DVSS
XTAL OUT
XTAL IN
TEST1
SIF IN2
SIF GND
SIF IN1
AVSUP
AVSS
MONO IN
IFREF
AMVSS
AHVSS
BREF
REF2
REF1
VREF
AHVCC
10L CAPM
AHVSUP
VOL CAPA
LOUT
ROUT
VREF1
LOUT
ROUT
DVSS
DVSS
ADDR. SEL.
STDBY
DVSS
SCL
SDA
I2SCL
I2SWS
I2S OUT
I2S IN
DVSUP
DVSS
RESET
VREF2
MAINR
MAINL
TEST2
COR
COL
R303 10K
R304 220
R305 220
R3D54 220
R3D55 220
R3D56 220
R3D57 220
C338 Z-.01
L303 1μH
C339 16V 47μ
C337 50V 1μ
R311 100K
D304 1N4148
C332 272
C331 272
C330 390
C329 390
IC3D9
L302 1μH
+12V
R314 82K
C335 25V 10μ
R316 82K
C336 25V 10μ
Q306 JC50
R34 10K
R312 1K
R313 1K
Q307
Q308
I2S-CL
I2S-WS
I2S-OUT
I2S-IN
+5V
+12V
I2C DATA
I2C CLK
ILO
IRO
R3D42 100
R3D43 100
R3D1 4.7K
C3D1 12V .1 SR
DGND
MD0
DVCC
MD1
MD2
MD3
DGND
MD4
MD5
MD6
MD7
DR
DSCK
DSI
DSO
SDI0
SDI1
WSR
SGND
QVCC
QGND
SCKR
L3D3 4.7μH
C3D10 12V .1 SR
L3D2 4.7μH
IC3D1
DSPS6004FJ50


9
10
11
12
13
14
15
16
PCB-MAIN DC
PCB-SATELLITE DG
DC
DG
SC3LIN
SC3RIN
+8V
MONO-IN
SIF
SC1RO
SC1LO
SC1RI
SC1LI
SC2RI
SC2LI
SC2LO
SC2RO
BR
+20V
SC1RO(IN)
SC1RO(OUT)
SC1LO(IN)
SC1LO(OUT)
SC2RI(OUT)
SC2RI(IN)
SC2LI(OUT)
SC2LI(IN)
SC2LO(OUT)
SC2LO(IN)
SC2RO(OUT)
SC2RO(IN)
BR
SDA
SCL
HE
R340 100
R341 100
D303 1N4148
8V
L302 1μH
IC3D9
J352
R
L
X301
C301 12 CH
C302 12 CH
C303 Z-.01
C304 Z-.01
C305 .01
C306 16V 47μ
C307 Z-.01
C308 50V .33μ
C309 .1
C310 25V 10μ
L301 1μH
C311 50V .33μ
C312 50V .33μ
C313 50V .33μ
C314 50V .33μ
L309 3.3μH
L308 3.3μH
C315 50V .33μ
C316 50V .33μ
C317 470
C318 470
C319 .1
C320 50V 3.3μ
C321 16V 47μ
C322 Z-.01
C323 25V 10μ
C324 25V 10μ
C325 16V 22μ
C326 16V 22μ
C327 16V 22μ
C328 16V 22μ
DVSS
XTAL OUT
XTAL IN
TEST1
SIF IN2
SIF GND
SIF IN1
AVSUP
AVSS
MONO IN
IFREF
AHVSS
AHVSS
BREF
REF2
REF1
VREF
AHVCC
IDL CAPM
AHVSUP
VOL CAPM
LOUT
ROUT
VREF1
LOUT
ROUT
DVSS
DVSS
ADDR-SEL.
STDBY
DVSS
SCL
SDA
I2SCL
I2SWS
I2S OUT
I2S IN
DVSUP
DVSS
RESET
VREF2
MAINR
MAINL
TEST2
CDR
CDL
R303 10K
R304 220
R305 220
R3054 220
R3055 220
R3056 220
R3057 220
C338 Z-.01
C339 16V 47μ
L303 1μH
C337 50V 1μ
R311 100K
D304 1N4148
C332 272
C331 272
C330 390
C329 390
C335 25V 10μ
C336 25V 10μ
R314 82K
R315 82K
R316 82K
R317 82K
R319 820
R318 820
Q302 JC501R
Q303 JC501R
Q305 JC501R
Q306 JC501R
R320 560
R321 560
L304 3.3μH
L305 3.3μH
C365 2200
C366 2200
C368 16V 100μ
C367 16V 100μ
R335 220
R334 220
R333 22K
D302 1N4148
R337 100K
R342 10K
R313 1K
R312 1K
Q307
Q308
+12V
I2S-CL
I2S-WS
I2S-OUT
I2S-IN
+5V
+12V
I2C DATA
I2C CLK
ILO
IRO
R3D42 100
R3D43 100
R3D41 100
R3D39 100
R3D40 100
8V
Q304
R336 100K
R338 47
C369 50V 47μ
L+R
MAIN MUTE
REAR
MAIN R
DD
PCB-AUD-PWR DD
PCB-MAIN
PCB-INDENT (CT-28AV1 G-S/GS/GDS/GD-S only)
Q3D6 JC501-R

F

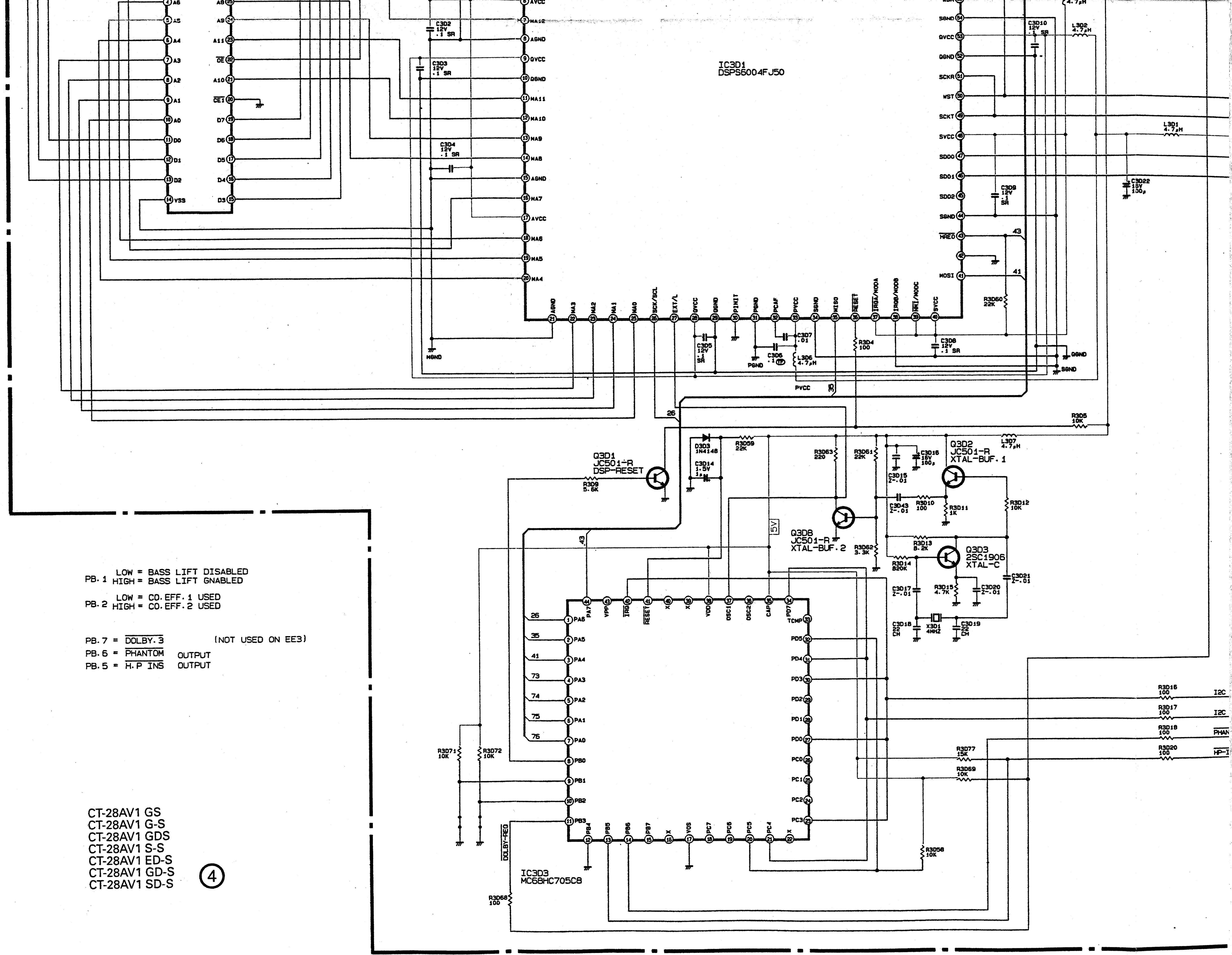
G

H

I

J

K


IC3D1
DSPS6004FJ50
IC3D3
MC68HC705C8
Q3D1
JC501-R
DSP-RESET
Q3D2
JC501-R
XTAL-BUF. 1
Q3D8
JC501-R
XTAL-BUF. 2
Q3D3
2SC1906
XTAL-C
D3D3
1N4148
X3D1
4MHZ
L3D1
4.7μH
L3D2
4.7μH
L3D6
4.7μH
L3D7
4.7μH
C3D22
15V
100μ
C3D16
16V
100μ
C3D14
1.5V
1μ
R3D5
10K
R3D9
5.6K
R3D59
22K
R3D63
220
R3D61
22K
R3D62
3.3K
R3D60
22K
R3D4
100
R3D10
100
R3D11
1K
R3D12
10K
R3D13
8.2K
R3D14
820K
R3D15
4.7K
R3D16
100
R3D17
100
R3D18
100
R3D20
100
R3D77
15K
R3D69
10K
R3D58
10K
R3D68
100
R3D71
10K
R3D72
10K
C3D2
C3D3
C3D4
C3D5
C3D6
C3D7
C3D8
C3D9
C3D10
C3D15
C3D17
C3D18
C3D19
C3D20
C3D21
C3D43
MGND
PGND
QGND
SGND
PVCC
5V
I2C
I2C
PHAN
HP-I
DOLBY-REQ
RESET
OSC1
OSC2
VDD
VPP
IRQ
CAP
TCMP

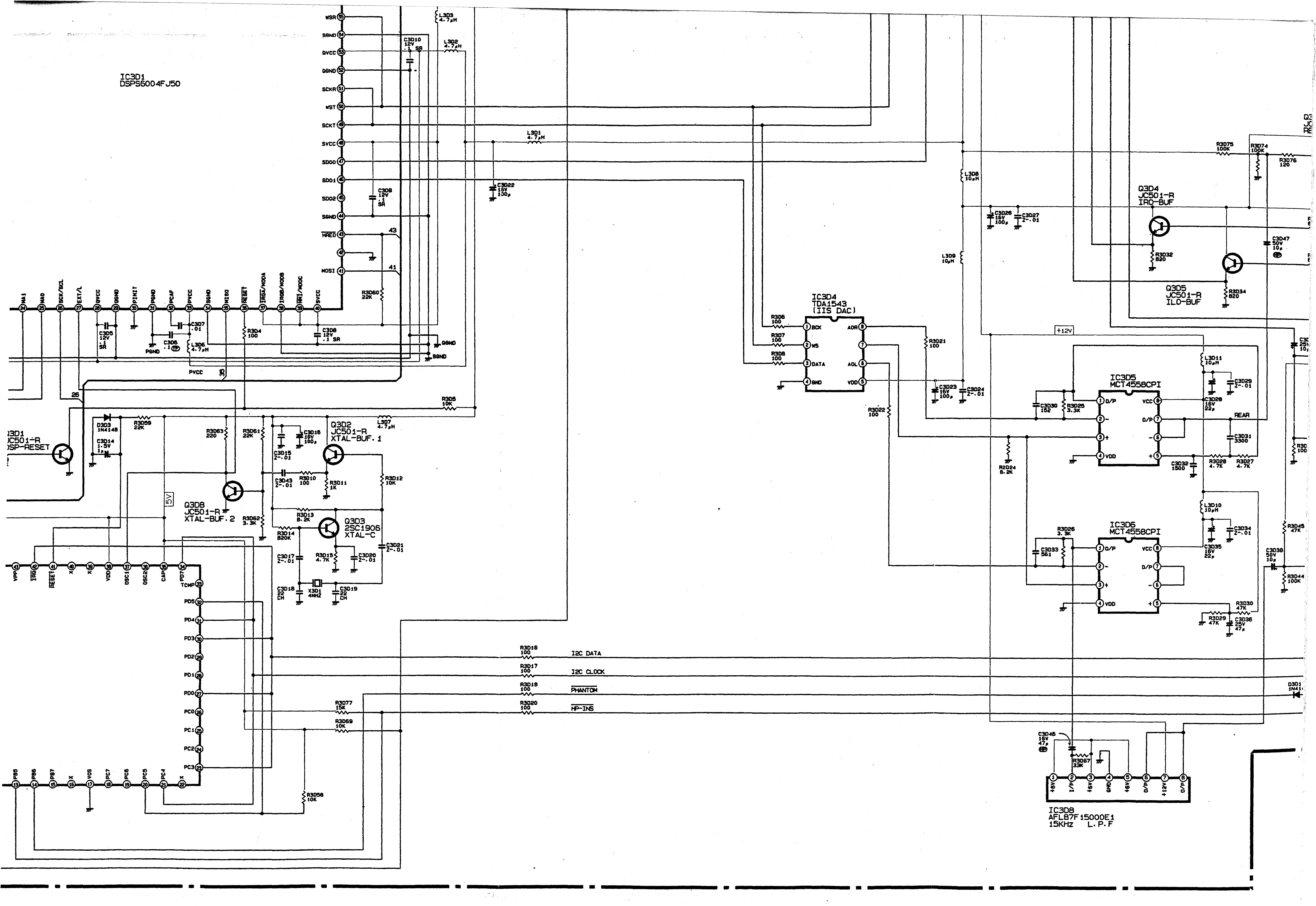
PB.1 LOW = BASS LIFT DISABLED
HIGH = BASS LIFT GNABLED

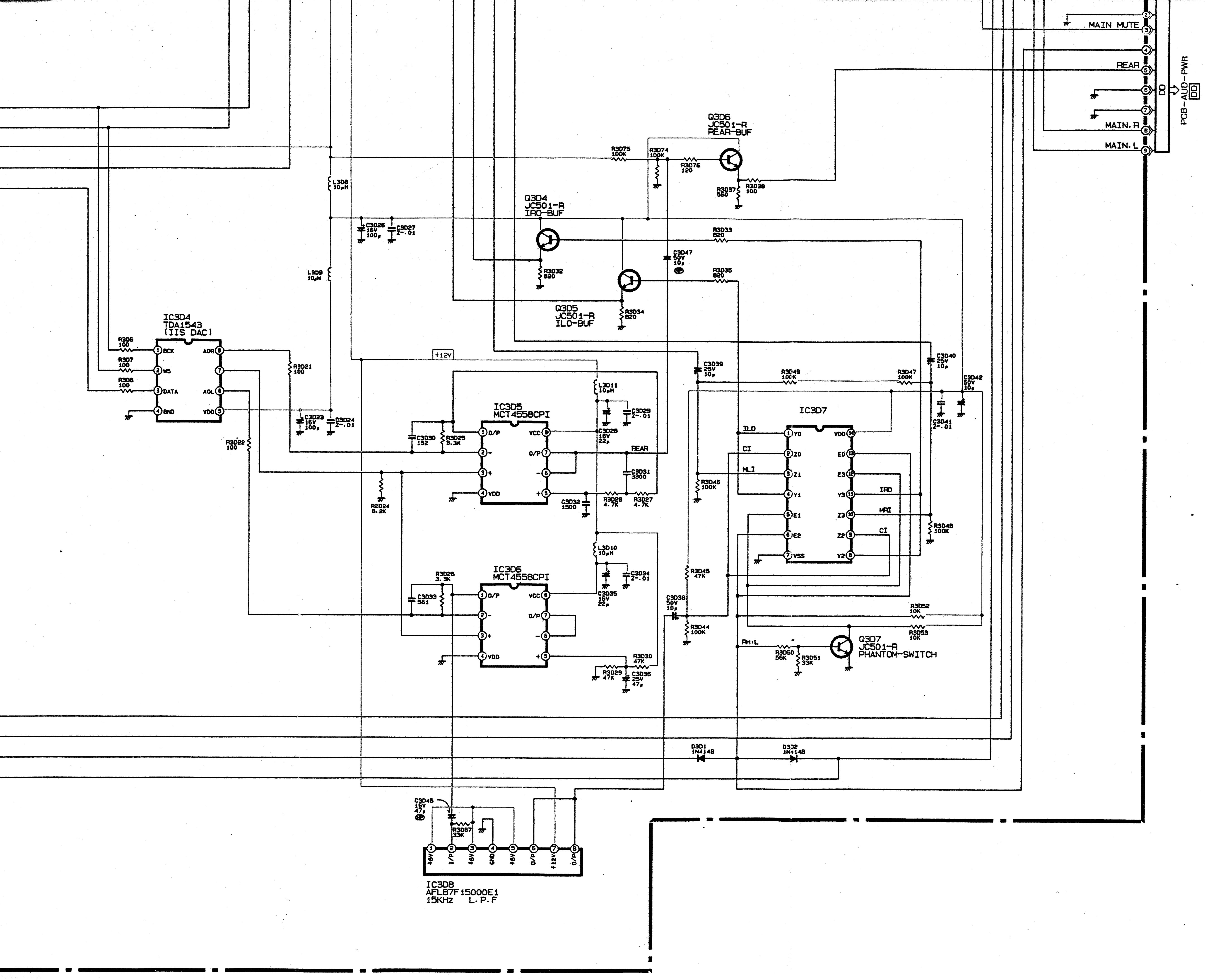
PB.2 LOW = CO.EFF.1 USED
HIGH = CO.EFF.2 USED

PB.7 = $\overline{\text{DOLBY.3}}$ (NOT USED ON EE3)
PB.6 = $\overline{\text{PHANTOM}}$ OUTPUT
PB.5 = $\overline{\text{H.P INS}}$ OUTPUT

CT-28AV1 GS
CT-28AV1 G-S
CT-28AV1 GDS
CT-28AV1 S-S
CT-28AV1 ED-S
CT-28AV1 GD-S
CT-28AV1 SD-S

④


IC3D1
DSPS6004FJ50
WSR
SGND
QVCC
QGND
SCKR
WST
SCKT
SVCC
SDO0
SDO1
SDO2
SGND
HREQ
MOSI
MA1
MA0
SCK/SCL
EXT/L
QVCC
QGND
PINIT
PGND
PCAF
PVCC
SGND
MISO
RESET
IRQA/MODA
IRQB/MODB
NMI/MODC
SVCC
L3D3 4.7µH
C3D10 12V .1 SR
L3D2 4.7µH
L3D1 4.7µH
C3D22 16V 100µ
C3D9 12V .1 SR
R3D60 22K
C3D5 12V .1 SR
C3D6 .1
C3D7 .01
L3D6 4.7µH
R3D4 100
C3D8 12V .1 SR
QGND
SGND
PGND
PVCC
R3D5 10K
Q3D1
JC501-R
DSP-RESET
D3D3 1N4148
C3D14 1.5V 1µ
R3D59 22K
R3D63 220
R3D61 22K
C3D16 16V 100µ
C3D15 Z-.01
Q3D2
JC501-R
XTAL-BUF.1
L3D7 4.7µH
C3D43 Z-.01
R3D10 100
R3D11 1K
R3D12 10K
Q3D8
JC501-R
XTAL-BUF.2
5V
R3D62 3.3K
R3D13 8.2K
R3D14 820K
Q3D3
2SC1906
XTAL-C
C3D21 Z-.01
C3D17 Z-.01
R3D15 4.7K
C3D20 Z-.01
C3D18 22 CH
X3D1 4MHZ
C3D19 22 CH
VPP
IRQ
RESET
X
X
VDD
OSC1
OSC2
CAP
PD7
TCMP
PD5
PD4
PD3
PD2
PD1
PD0
PC0
PC1
PC2
PC3
PB5
PB6
PB7
X
VSS
PC7
PC6
PC5
PC4
X
R3D77 15K
R3D69 10K
R3D58 10K
R3D16 100
I2C DATA
R3D17 100
I2C CLOCK
R3D18 100
PHANTOM
R3D20 100
HP-INS
IC3D4
TDA1543
(IIS DAC)
BCK
WS
DATA
GND
AOR
AOL
VDD
R3D6 100
R3D7 100
R3D8 100
R3D21 100
R3D22 100
C3D23 16V 100µ
C3D24 Z-.01
L3D8 10µH
L3D9 10µH
C3D26 16V 100µ
C3D27 Z-.01
R3D75 100K
R3D74 100K
R3D76 120
Q3D4
JC501-R
IRO-BUF
R3D32 820
C3D47 50V 10µ
Q3D5
JC501-R
ILO-BUF
R3D34 820
+12V
IC3D5
MCT4558CPI
O/P
VCC
O/P
VDD
L3D11 10µH
C3D29 Z-.01
C3D28 16V 22µ
C3D30 152
R3D25 3.3K
REAR
C3D31 3300
R2D24 8.2K
C3D32 1500
R3D28 4.7K
R3D27 4.7K
IC3D6
MCT4558CPI
L3D10 10µH
C3D34 Z-.01
C3D35 16V 22µ
R3D26 3.3K
C3D33 561
R3D30 47K
R3D29 47K
C3D36 25V 47µ
R3D45 47K
C3D38 50V 10µ
R3D44 100K
D3D1 1N41
C3D46 16V 47µ
R3D67 33K
+6V
I/P
+6V
GND
+6V
O/P
+12V
O/P
IC3D8
AFL87F15000E1
15KHz L.P.F
43
41
26
30


MAIN MUTE
REAR
MAIN. R
MAIN. L
DD
PCB-AUD-PWR
DD
Q3D6
JC501-R
REAR-BUF
R3D75
100K
R3D74
100K
R3D76
120
R3D37
560
R3D38
100
L3D8
10μH
Q3D4
JC501-R
IRO-BUF
C3D26
16V
100μ
C3D27
Z-.01
R3D33
820
C3D47
50V
10μ
R3D32
820
L3D9
10μH
R3D35
820
Q3D5
JC501-R
ILO-BUF
R3D34
820
IC3D4
TDA1543
(IIS DAC)
R3D6
100
R3D7
100
R3D8
100
BCK
WS
DATA
GND
AOR
AOL
VDD
R3D21
100
+12V
C3D23
16V
100μ
C3D24
Z-.01
R3D22
100
L3D11
10μH
C3D29
Z-.01
IC3D5
MCT4558CPI
C3D30
152
R3D25
3.3K
O/P
VCC
C3D28
16V
22μ
REAR
C3D31
3300
VDD
R2D24
8.2K
C3D32
1500
R3D28
4.7K
R3D27
4.7K
C3D39
25V
10μ
R3D49
100K
R3D47
100K
C3D40
25V
10μ
C3D42
50V
10μ
IC3D7
C3D41
Z-.01
ILO
CI
MLI
Y0
Z0
Z1
Y1
E1
E2
VSS
VDD
E0
E3
Y3
Z3
Z2
Y2
IRO
MRI
CI
R3D46
100K
R3D48
100K
L3D10
10μH
C3D34
Z-.01
IC3D6
MCT4558CPI
R3D26
3.3K
C3D33
561
C3D35
16V
22μ
R3D45
47K
C3D38
50V
10μ
R3D44
100K
R3D52
10K
R3D53
10K
Q3D7
JC501-R
PHANTOM-SWITCH
PH:L
R3D50
56K
R3D51
33K
R3D30
47K
R3D29
47K
C3D36
25V
47μ
D3D1
1N4148
D3D2
1N4148
C3D46
16V
47μ
NP
R3D67
33K
+6V
I/P
+6V
GND
+6V
O/P
+12V
O/P
IC3D8
AFL87F15000E1
15KHz L.P.F